Industry Guide 106

Health Hazards Targeted in North Carolina Industry

Safety and Health Management Program

NCDOL
N.C. Department of Labor

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N.C. Department of Labor
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This guide is in a series of industry guides focused on the Special Emphasis Programs. It is intended to be consistent with all existing OSHA standards; therefore, if an area is considered by the reader to be inconsistent with a standard, then the OSHA standard should be followed.

To obtain additional copies of this guide, or if you have questions about North Carolina occupational safety and health standards or rules, please contact:

N.C. Department of Labor
Education, Training and Technical Assistance Bureau
1101 Mail Service Center
Raleigh, NC 27699-1101

Phone: 919-807-2875 or 1-800-625-2267

Additional sources of information are listed on the inside back cover of this guide.

The projected cost of the NCDOL OSH program for federal fiscal year 2011–2012 is $17,841,216. Federal funding provides approximately 31 percent ($5,501,500) of this total.

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Foreword

In North Carolina, the N.C. Department of Labor enforces the federal Occupational Safety and Health Act through a state plan approved by the U.S. Department of Labor. NCDOL offers many educational programs to the public and produces publications to help inform people about their rights and responsibilities regarding occupational safety and health.

When reading this guide, please remember the mission of the N.C. Department of Labor is greater than just regulatory enforcement. An equally important goal is to help citizens find ways to create safe workplaces. Everyone profits when managers and employees work together for safety. This booklet, like the other educational materials produced by the N.C. Department of Labor, can help.

Cherie Berry
Commissioner of Labor

Overview

This industry guide is designed to assist employers in developing a comprehensive safety and health program with best practices to be tailored to your own operation. We encourage you to customize the information in this industry guide as necessary to accomplish this goal. You may also copy any of the material in this guide to be used in your safety and health efforts.

This guide is provided as a best practice and compliance aid. It does not constitute a legal interpretation of OSHA standards, nor does it replace the need to be familiar with and follow the actual OSHA standards (including any North Carolina-specific changes.) ***Though the programs contained in this document are intended to be consistent with OSHA standards, if an area is considered by the reader to be inconsistent, the OSHA standard should be followed.*** **Please note that this guide may not include all the programs and policies that may be required by OSHA standards or as a best practice for your specific operation or industry. It may also include more programs than are needed for your operation.**

The N.C. Department of Labor (NCDOL) Occupational Safety and Health (OSH) Division's Consultative Services Bureau can be contacted for assistance in helping you set up your individual safety and health management program and with on-site surveys. Feel free to contact them at 1-800-NC-LABOR (1-800-625-2267) or at 919-807-2899. You may also want to visit their website at http://www.nclabor.com/osha/consult/consult.htm

For training events, publications, PowerPoint presentations and standard interpretations, please contact the Education, Training and Technical Assistance (ETTA) Bureau at 919-807-2875 or access their website at http://www.nclabor.com/osha/etta/etta.htm.

Special Emphasis Program (SEP)

The purpose of the Occupational Safety and Health Act of North Carolina is "to ensure so far as possible every working man and woman in the State of North Carolina safe and healthful working conditions and to preserve our human resources." The OSH Division's Five-Year Strategic Plan is designed to promote the achievement of this purpose through the specific goals and objectives established by the division and its employees.

To reduce injuries, illnesses and fatalities in North Carolina, the OSH Division established a basic strategy of designating specific performance goals affecting specific industry groups and workplace health hazards. By concentrating on injuries and illnesses and fatalities in these specific areas, the overall rates for days away, restricted or transferred rate (DART) should be reduced.

The primary SEP groups include:

Special Emphasis Program	Team Leader	Contact Information
Construction	Bruce Pearson	Bruce.Pearson@labor.nc.gov
Logging and Arboriculture	Leighton Dowdle	Leighton.Dowdle@labor.nc.gov
Food Manufacturing	Steve Davis	Steve.Davis@labor.nc.gov
Wood Products	Ed Lewis	Ed.Lewis@labor.nc.gov
Long Term Care	Ed Geddie	Ed.Geddie@labor.nc.gov
Health Hazards*	John Koneski	John.Koneski@labor.nc.gov

*Silica, isocyanates, asbestos, hexavalent chromium, lead

To aid employers in each of these industry groups, the Education, Training and Technical Assistance bureau has developed SEP-specific PowerPoint presentations. These presentations can be downloaded from the NCDOL website for use by the employer or training may be requested through our outreach services.

For further information regarding SEPs, contact the appropriate team leader of the SEP.

Section 1
Safety and Health Program Management

***Note:** The following example policy is a **best practice**. Please modify or delete content to these policies as deemed necessary.*

Management Commitment

Safety and Health Policy

We place a high value on the safety and health of our employees. We are committed to providing a safe workplace for all employees and have developed this program for injury prevention to involve management, supervisors and employees in identifying and eliminating hazards that may develop during our work process.

It is the basic safety and health policy of this company that no task is so important that an employee must violate a safety and health rule or take a risk of injury or illness to get the job done.

Employees are required to comply with all company safety and health rules and are encouraged to actively participate in identifying ways to make our company a safer place to work.

Supervisors are responsible for the safety and health of their employees and, as a part of their daily duties, must check the workplace for unsafe conditions, watch employees for unsafe actions and take prompt action to eliminate any hazards.

Management will do its part by devoting the resources necessary to form a safety and health committee composed of management and elected employees. We will develop a system for identifying and correcting hazards. We will plan for foreseeable emergencies. We will provide initial and ongoing training for employees and supervisors and we will establish a disciplinary policy to ensure that company safety and health policies are followed.

Note: *The following example policy is a* ***best practice****. Please modify or delete content to these policies as deemed necessary.*

Safety and Health Responsibilities

Manager Responsibilities

- Ensure that sufficient employee time, supervisor support and funds are budgeted for equipment, training and carrying out the safety and health program.
- Evaluate supervisors each year to make sure they carry out their responsibilities as described in this program.
- Ensure that incidents are fully investigated and corrective action is taken to prevent the hazardous conditions or behaviors from happening again.
- Ensure that a record of injuries and illnesses is maintained and posted as described in this program.
- Set a good example by following established safety and health rules and attending required training.
- Report unsafe practices or conditions to the supervisor of the area where the hazard was observed.

Supervisor Responsibilities

- Ensure that each employee has received initial orientation before beginning work.
- Ensure that each employee is competent or has received training on safe operation of equipment or tasks before starting work.
- Ensure that each employee receives required personal protective equipment (PPE) before starting work on a project requiring PPE.
- Perform a daily safety check of the work area. Promptly correct any hazards you find.
- Observe the employees you supervise while they are working. Promptly correct any unsafe behavior. Provide additional training and take corrective action as necessary.
- Document employee evaluations.
- Set a good example for employees by following the safety and health rules and attending required training.
- Investigate all incidents in your area and report findings to management.
- Talk to management about changes to work practices or equipment that will improve employee safety and health.

Employee Responsibilities

- Follow the safety and health rules established by your company. Report unsafe conditions or actions to your supervisor or safety and health committee representative promptly.
- Report all work-related injuries and illnesses to your supervisor promptly, regardless of how minor they may seem.
- Report all near miss incidents to your supervisor promptly.
- Always use personal protective equipment that is in good working condition when it is required.
- Do not remove or bypass any safety device or safeguard provided for your protection.
- Encourage your co-workers to use safe work practices on the job.
- Make suggestions to your supervisor, safety and health committee representative, or management about changes that will improve employee safety and health.

Note: *The following example policy is a* ***best practice****. Please modify or delete content to these policies as deemed necessary.*

Employee Participation

Note: *While safety and health committees are not required by law (with the exception of employers covered by N.C. Gen. Stat. 95-251), the following can be used as a statement when the company has a voluntary safety and health committee and is an example of how the committee members may be selected and function within the company. Alternative methods may be used as well.*

Safety and Health Committees and Meetings

Employers can form safety and health committees to help employees and management work together to identify safety and health problems, develop solutions, review incident reports, and evaluate the effectiveness of the safety and health program. The committee should be made up of management-designated representatives and employee-elected representatives from all areas within the company.

Employees from each operational unit, division or area may volunteer or be nominated from among themselves to be a representative on the committee. If there is only one volunteer or nomination, the employees may approve the person by voice vote at a short meeting called for that purpose. If there is more than one volunteer or nomination, a secret paper ballot may be used to elect the representative.

Elected representatives will serve for *(insert number of years)* year(s) before being re-elected or replaced. If there is a vacancy then an election will be held before the next scheduled meeting to fill the balance of the term. (It is recommended that members serve two years, with half of the members replaced after the first year when the initial committee is formed, so that there are carry-over members on the committee at all times).

In addition to the employee-elected representatives, management should designate no more than three representatives but a minimum of one who will serve until replaced by management. Management representation should not outnumber employee representation. If the company employs a medical professional on staff, it is recommended that this individual serve on the safety and health committee as well but at least an individual who manages the workers' compensation, injury and illness, and first aid logs, such as the company safety and health manager.

A chairperson should be selected by a majority vote by the committee members each year. If there is a vacancy, the same method should be used to select a replacement.

The duties of safety and health committee members include:

- Conducting a monthly self-inspection of the area they represent.
- Communicating with the employees they represent on safety and health issues.
- Encouraging safe work practices among co-workers.
- Reviewing the injury, illness and first aid logs for trends and conducting a separate investigation of any incident (if determined appropriate).
- Providing any recommendations to management for consideration.

The safety and health committee should meet at least *(insert frequency).* Each area committee member should bring information from the monthly inspections of their areas and any concerns from the employees in the area they represent. Using this information, the committee can help identify safety and health problems, develop solutions, review incident reports, provide training, and evaluate the effectiveness of the safety and health program.

A committee member will be designated to keep minutes. A copy of the minutes will be posted in a place where all affected employees have access to them. The company should archive meeting minutes for a specified period of time such as one year for follow-up/review purposes. (The company may choose to post minutes on employee bulletin boards, on an intranet, etc. Additionally, the company may choose to archive such records electronically.)

General Employee Safety Meetings

All employees are required to attend a monthly safety and health meeting. This meeting will help identify safety and health problems, develop solutions, provide training, and evaluate the effectiveness of the safety and health program.

An employee will be designated each month to keep the minutes. A copy of the minutes will be posted in a place where all affected employees have access to them. The company should archive meeting minutes for a specified period of time such as one year for follow-up/review purposes. *(The company may choose to post minutes on employee bulletin boards, on an intranet, etc. Additionally, the company may choose to archive such records electronically)*.

Note: *The following example policy contains workers' compensation procedures, and OSHA recordkeeping requirements. It also contaains* ***best practices*** *that can be modified or delected to the policy as deemed appropriate. Refer to the NCIC website http://www.ic.nc.gov/ for information on workers' compensation.*

Recordkeeping and Reporting (Ref. 29 CFR 1904, 29 CFR 1910.1020)

Injuries and Illnesses Reporting

Employees are required to report any injury or work-related illness to their immediate supervisor regardless of how serious. Minor injuries such as cuts and scrapes will be entered on the first aid log. The employee will use an *"Employee's Incident Report"* form (or Workers' Compensation Form 18) to report more serious/compensable injuries.

The supervisor will:

- Investigate all injuries and illnesses in their work area, including serious first-aid cases and near miss incidents. Complete an *"Incident Investigation Report"* form and *"Supervisor's Incident Investigation"* form immediately following the incident.
- Provide all *incident investigation report* forms *to the safety and health manager/company medical professional or HR/personnel office within three days of the incident.*

The safety and health manager/company medical professional/HR or personnel manager will:

- Determine from the Employee's Incident Report form, Incident Investigation Report form and any claim form associated with the incident whether it must be recorded on the OSHA 300 Injury and Illness Log and Summary according to the instructions for that form. (The N.C. Industrial Commission Form 19 may be used in lieu of OSHA Form 301.)
- Enter any recordable incident within seven calendar days after becoming aware of the injury/illness/fatality.
- If the injury is not recorded on the OSHA log, add it to the first aid log, which is used to record non-OSHA recordable injuries and near misses.
- The employer may need to fill out and file a Workers' Compensation Form 19, "Employer's Report of Employee's Injury," with the Industrial Commission within five days of learning of an injury or allegation. If a Form 19 is filed with the Industrial Commission, the employer must provide a copy of the Form 19 to the employee, together with a blank Form 18, "Notice of Accident to Employer and Claim of Employee," for use by the employee. (http://www.ic.nc.gov/)

A signed copy of the OSHA log summary (OSHA Form 300A) for the previous year must be posted on the safety bulletin board from Feb. 1 through April 30. The log must be kept on file for at least five years. Any employee can view an OSHA log upon request at any time during the year.

Employee Access to Medical and Exposure Records

Whenever an employee or designated representative requests access to a record, we must ensure that access is provided in a reasonable time, place, and manner. If we cannot reasonably provide access to the record within 15 working days, we will apprise the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.

The medical record for each employee will be preserved and maintained for at least the duration of employment plus 30 years.

First aid records (not including medical histories) of one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and the like that do not involve medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job, if made on-site by a nonphysician and if maintained separately from the employer's medical program and its records and the medical records of employees who have worked for less than one year for the employer need not be retained beyond the term of employment if they are provided to the employee upon the termination of employment.

Exposure Records

Background data to environmental (workplace) monitoring or measuring, such as laboratory reports and worksheets, need only be retained for one year so long as the sampling results, the collection methodology (sampling plan), a description of the analytical and mathematical methods used, and a summary of other background data relevant to interpretation of the results obtained are retained for at least 30 years.

Material safety data sheets and records concerning the identity of a substance or agent need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used is retained for at least 30 years.

Biological monitoring results designated as exposure records by specific occupational safety and health standards must be preserved and maintained as required by the specific standard.

Analyses using exposure or medical records must be preserved and maintained for at least 30 years.

Training Records

Some standards require training records to be maintained for three years and some do not require training records. Records of employees who have worked for less than one year need not be retained after employment, but we are required to provide these records to the employee upon termination of employment. Our policy is to maintain training records for *(insert time frame)*.

Note: *The following example policy is a* ***best practice****. Please modify or delete content to these policies as deemed necessary.*

Accident/Incident Investigation Policy

Accident/Incident Investigation Procedures

If an employee dies while working or within 30 days of the initial accident/incident causing an injury or illness, or when three or more employees are admitted to the hospital as a result of a work-related accident/incident, the company must contact the N.C. Department of Labor's OSH Division within eight hours of becoming aware of the accident/incident. The toll-free notification number is 1-800-NC-LABOR (1-800-625-2267).

Whenever there is an incident that results in death or serious injuries or illnesses, a preliminary investigation will be conducted by an accident investigation team made up of the immediate supervisor of the injured person(s), a person designated by management, an employee representative of the safety and health committee, and any others whose expertise would help in the investigation.

The accident investigation team will take written statements from witnesses and photograph the incident scene and equipment involved. The team will also document, as soon as possible after the incident, the condition of equipment and any anything else in the work area that may be relevant. The team will complete a written incident investigation report. The report will include a sequence of events leading up to the incident, conclusions about the incident and any recommendations to prevent a similar incident in the future. This report will be given to *(insert appropriate name/job title)* for corrective action. The report will be reviewed by the safety and health committee at its next regularly scheduled meeting.

When a supervisor becomes aware of an employee injury where the injury was not serious enough to warrant a team investigation as described above, the supervisor will write an incident investigation report to accompany the employee's report and forward them to *(insert appropriate name/job title)*.

In addition, whenever there is an incident that did not result in an injury to an employee *(a near miss)*, the supervisor will investigate the incident. The incident investigation report form will be filled out to investigate the near miss and to establish any corrective action as applicable. The form will be clearly marked to indicate that it was a near miss and that no actual injury occurred. The report will be forwarded to *(insert appropriate name/job title)* to record on the incident log and for further action.

Employee's Incident Report Form

Instructions: Employees will use this form to report ***all*** work-related injuries, illnesses or "near miss" events (which could have caused an injury or illness)—*no matter how minor*. This helps to identify and correct hazards before they cause serious injuries. This form will be completed by employees as soon as possible and given to a supervisor for further action. (NCIC Form 18 may be used in place of this one.)

I am reporting a work related: ❑ Injury ❑ Illness ❑ Near miss	
Name:	
Job Title:	
Supervisor:	
Have you told your supervisor about this injury/near miss? ❑ Yes ❑ No	
Date of injury/illness/near miss:	Time of injury/illness/near miss:
Names of witnesses (if any):	
Where exactly did it happen?	
What were you doing at the time?	
Describe step by step what led up to the injury/illness/near miss (continue on the back if necessary):	
What could have been done to prevent this injury/illness/near miss?	
What parts of your body were injured? If a near miss, how could you have been hurt?	
Did you see a doctor about this injury/illness? ❑ Yes ❑ No	
If yes, whom did you see?	Doctor's phone number:
Date:	Time:
Has this part of your body been injured before? ❑ Yes ❑ No	
If yes, when?	Supervisor:
Employee's signature:	Date:

Supervisor's Incident Investigation Form

Name of Injured Person _____
Date of Birth _____ Telephone Number _____
Address _____
City _____ State _____ Zip _____
☐ Male ☐ Female

What part of the body was injured? Describe in detail.

_____

_____

What was the nature of the injury? Describe in detail.

_____

_____

Describe fully how the accident happened. What was employee doing prior to the event? What equipment and tools were being used?

_____

_____

Names of all witnesses:

_____

_____

Date of Event _____ Time of Event _____ ☐ am ☐ pm

Exact location of event:

_____

_____

What caused the event?

_____

_____

Were safety regulations in place and used? If not, what was wrong?

_____

_____

Employee went to doctor/hospital? Doctor's Name:

Hospital's Name:

Recommended preventive action to take in the future to prevent reoccurrence:

_____

_____

_____ _____

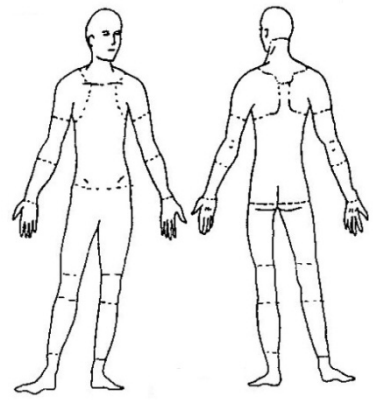
Supervisor's Signature Date

Incident Investigation Report

Instructions: Complete this form as soon as possible after any incident that an employee reports or which results in serious injury or illness and to investigate a minor injury or near miss that could have resulted in a serious injury or illness.

This is a report of : ❑ Death ❑ Lost Time ❑ Dr. Visit Only ❑ First Aid Only ❑ Near Miss	
Date of incident:	This report is made by: ❑ Employee ❑ Supervisor ❑ Team ❑ Other_____

Step 1: Injured employee (complete this part for each injured employee)

Name:	Sex: ❑ Male ❑ Female	Age:
Department:	Job title at time of incident:	
Part of body affected: (shade all that apply) 	Nature of injury: (most serious one): ❑ Abrasion, scrapes ❑ Amputation ❑ Broken bone ❑ Bruise ❑ Burn (heat) ❑ Burn (chemical) ❑ Concussion (to the head) ❑ Crushing Injury ❑ Cut, laceration, puncture ❑ Hernia ❑ Illness ❑ Sprain, strain ❑ Damage to a body system: ❑ Other _____	This employee works: ❑ Regular full time ❑ Regular part time ❑ Seasonal ❑ Temporary Months with this company: Months doing this job:

Step 2: Describe the incident

Exact location of the incident:	Exact time:
What part of employee's workday? ❑ Entering or leaving work ❑ Doing normal work activities ❑ During meal period ❑ During break ❑ Working overtime ❑ Other_____	
Names of witnesses (if any):	

Attachments	Written witness statements:	Photographs:	Maps/drawings:

What personal protective equipment was being used (if any)?

Describe, step-by-step the events that led up to the injury. Include names of any machines, parts, objects, tools, materials and other important details. Attach separate sheets if necessary.

Step 3: Why did the incident happen?

Unsafe workplace conditions: (Check all that apply)	Unsafe acts by people: (Check all that apply)
❑ Inadequate guard	❑ Operating without permission
❑ Unguarded hazard	❑ Operating at unsafe speed
❑ Defective safety device	❑ Servicing equipment that has power to it
❑ Defective tool or equipment	❑ Making a safety device inoperative
❑ Hazardous workstation layout	❑ Using defective equipment
❑ Unsafe lighting	❑ Using equipment in an unapproved way
❑ Unsafe ventilation	❑ Unsafe lifting
❑ Lack of needed personal protective equipment	❑ Taking an unsafe position or posture
❑ Lack of appropriate equipment/tools	❑ Distraction, teasing, horseplay
❑ Unsafe clothing	❑ Failure to wear personal protective equipment
❑ No training or insufficient training	❑ Failure to use the available equipment/tools
❑ Other:_____	❑ Other:_____

Why did the unsafe conditions exist?

Why did the unsafe acts occur?

Is there a reward (such as “the job can be done more quickly” or “the product is less likely to be damaged”) that may have encouraged the unsafe conditions or acts? ❑ Yes ❑ No If yes, describe:

Were the unsafe acts or conditions reported prior to the incident?	❑ Yes ❑ No
Have there been similar incidents or near misses prior to this one?	❑ Yes ❑ No

Step 4: How can future incidents be prevented?

What changes do you suggest to prevent this incident/near miss from happening again?

❑ Stop this activity ❑ Guard the hazard ❑ Train the employee(s) ❑ Train the supervisor(s)
❑ Redesign task steps ❑ Redesign workstation ❑ Write a new policy/rule ❑ Enforce existing policy
❑ Routinely inspect for the hazard ❑ Personal protective equipment ❑ Other: _____

What should be (or has been) done to carry out the suggestion(s) checked above? Attach separate sheets if necessary.

Step 5: Who completed and reviewed this form? (Please Print)

Written by: Department:	Title: Date:
Names of investigation team members:	
Does team agree with corrective action recommended in step 4? ☐ Yes ☐ No ☐ N/A (Step 6 should be completed using investigation team's final recommendations)	
Reviewed by:	Title: Date:

Step 6: Corrective Action and Follow-up	
Written by: Department:	Title: Date:
List corrective action to be implemented, date completed and responsible parties. 1. _____ _____ 2. _____ _____ 3. _____ _____	
Date of follow-up:	Conducted by:

Note: *The following example policy is a* ***best practice****. Please modify or delete content to these policies as deemed necessary.*

Safety and Health Inspection Procedures

We are committed to aggressively identifying hazardous conditions and practices that are likely to result in injury or illness to employees. We will take prompt action to eliminate any hazards we find. In addition to reviewing injury records and investigating incidents for their causes, management and the safety committee will regularly check the workplace for hazards as described below.

- **Annual Site Survey**—Once a year, an inspection team made up of members of the safety and health committee will conduct a wall-to-wall walk-through inspection of the entire worksite. They will write down any safety hazards or potential hazards they find. The results of this inspection will be used to eliminate or control obvious hazards, target specific work areas for more intensive investigation, assist in revising the checklists used during regular monthly safety inspections, and as part of the annual review of the effectiveness of the accident prevention program.
- **Periodic Change Survey**—A supervisor or a team will be assigned to look at any changes we make to identify safety issues. Changes include new equipment, changes to production processes or changes to the building structure. The team will be made up of maintenance, production and safety committee representatives. It will examine the changed conditions and makes recommendations to eliminate or control any hazards that were or may be created as a result of the change.
- **Monthly Safety Inspection**—Each month, the safety and health committee representatives will inspect their areas for hazards using the standard safety and health inspection checklist. They will talk to co-workers about their safety and health concerns. The committee representatives will report any hazards or concerns to the safety and health committee at the next scheduled meeting for consideration. The results of the area inspection and any action taken will be posted in the affected area. Safety and health committee representatives should inspect each other's area.

***Note:** The following example policy is a **best practice**. Please modify or delete content to these policies as deemed necessary.*

Hazard Prevention and Control

Eliminating Workplace Hazards

We are committed to eliminating or controlling workplace hazards that could cause injury or illness to our employees. We will meet the requirements of OSHA standards where there are specific rules about a hazard or potential hazard in our workplace. Whenever possible, we will design our facilities and equipment to eliminate employee exposure to hazards. Where these engineering controls are not possible, we will write work practices (administrative controls) that effectively prevent employee exposure to the hazard. When the above methods of control are not possible or are not fully effective, we will require employees to use personal protective equipment (PPE) such as safety glasses, hearing protection and foot protection.

Basic Safety and Health Rules

Note: The company should establish a set of basic safety and health rules; however, the company should not address requirements for specific standards in this section. They should be addressed as part of/with the specific written program requirements of the standard.

The following basic safety and health rules have been established to help make the company a safe, healthy and efficient place to work. These rules are in addition to safety and health practices that must be followed when doing particular jobs or operating certain equipment. Those rules are listed in the safety hazard work practices and health hazard work practices sections of this manual. Failure to comply with any safety or health rules may result in disciplinary action.

The following are examples of basic safety and health rules. The company should base these rules on the hazards in its work environment.

- Never do anything that is unsafe in order to get the job done. If a job is unsafe, report it to your supervisor or safety committee representative. We will find a safer way to do that job.
- Do not remove or disable any safety device! Keep guards in place at all times on operating machinery.
- Never operate a piece of equipment unless you have been trained and are authorized.
- Use your personal protective equipment whenever it is required.
- Obey all safety warning signs.
- Loose clothing, jewelry and hair longer than shoulder length will not be worn around moving machinery.
- Working under the influence of alcohol or illegal drugs and using them at work are prohibited.
- Do not bring firearms or explosives onto company property (including personal vehicles in company-owned parking lots).
- Smoking is not permitted on company grounds (including in personal vehicles in company-owned parking lots OR if smoking is permitted, it is only permitted outside the building away from any entry or ventilation intake, except that smoking is not permitted in any areas where flammable or combustible liquid are dispensed, mixed, used or stored).
- Horseplay, running and fighting are prohibited.
- Report spills immediately so that they can be cleaned up promptly by appropriately trained employees.
- Replace all tools and supplies after use.
- Do not allow materials (especially combustible materials) to accumulate where they will become a tripping or fire hazard. Keep lids on trashcans at all times.
- Do not block any fire extinguisher, fire exit or exit pathway with materials or equipment.

Note: *The following example policy is a* ***best practice****. Please modify or delete content to these policies as deemed necessary.*

Disciplinary Policy

The company has established a progressive disciplinary program for those acts or practices not considered immediately dangerous to life or health. Unsafe acts will not be tolerated. Each employee has an individual responsibility to work safely. We have established a progressive disciplinary program for those acts or practices not considered immediately dangerous to life or health.

*(**Note:** The following are examples of disciplinary actions. Employers may wish to establish these policies as part of their general personnel policies and should seek legal advice prior to implementing them in the workplace.)*

First Instance	Warning, notation in employee file and instruction on proper actions.
Second Instance	Written reprimand and instruction on proper actions.
Third Instance	One- to five-day suspension, written reprimand, and instruction on proper actions.
Fourth Instance	Termination of employment.

An employee may be subject to immediate termination when a safety or health violation places the employee or co-workers at risk of permanent disability or death. These include but are not limited to:

- Failure to follow fall protection requirements.
- Failure to wear required respiratory protection.
- Failure to follow the substance abuse policy.
- Failure to wear a protective vest when working on or near a city street.
- Possession of firearms, explosives or dangerous weapons.
- Violation of project security rules or procedures.
- Fighting, horseplay, practical joking or gambling.
- Entering a confined space without following procedures.
- Unsafe or reckless operation of motorized vehicles or equipment.
- Failure to follow lockout/tagout procedures.
- Failure to follow hot work permit procedures.

Note: *The following example policy is a* ***best practice****. It is an example of a drug testing and alcohol and drug use policy. Employers may wish to establish these policies as part of their general personnel policies and should seek legal advice prior to implementing them in the workplace.*

Alcohol and Drug Use Policy

We have a vital interest in maintaining safe, healthy and efficient working conditions for our employees. Therefore, the use of substances that impair an employee's ability to perform the job safely is not allowed. The use of these substances (except legally prescribed drugs reported to the supervisor/employer) during duty hours is prohibited, and their use may result in disciplinary action. Duty hours consist of all working hours, including break periods and on-call periods, whether on or off company premises.

The consumption of alcohol or illegal drugs while performing company business or while in a company facility or vehicle is prohibited and will result in disciplinary action up to and including termination of employment. Additionally, employees must report to their supervisor the use of legally prescribed drugs (such as narcotics) that may affect their ability to perform any part of their job safely so that alternate assignments/duties may be considered when necessary. Failure to report this type of drug use may also result in disciplinary action under certain circumstances.

Drug testing will be performed after **all** accidents that occur on company time or property or in or on a company owned vehicle or other equipment. Additionally, random drug testing may be performed if employees are suspected of being under the influence of alcohol or any illegal drug and when they appear to be impaired by **any** substance, including unreported use of legally prescribed medications, while at work. Refusal to submit to a drug test after an accident/incident may result in termination of employment.

The Controlled Substance Examination Act sets procedural standards that employers must follow when conducting drug testing of applicants and employees. The act does not protect employees from adverse actions taken by employers as a result of test results. A packet containing the rules, forms and frequently asked questions may be downloaded at http://www.nclabor.com/wh/Controlled%20Substance%20Examination%20Regulation%20Act-%20Packet%20-%202.12.2007.pdf

(Reference N.C. Gen. Stat. Chapter 90, Article 5.)

Section 2
Safety and Health Programs

Note: *The following pages contain example safety and health programs and policies that may be applicable to your company. It is the responsibility of the company to determine whether these programs are mandatory in your work environment based on the scope and application of the referenced standard. Every effort has been made to include the content required by the NCDOL OSH Division standards. Additionally, other good practices have been included that may or may not apply to your company. Please add or delete content to these programs as deemed necessary.*

While most standards do not require a program administrator or coordinator, it is a good practice to have an employee who is knowledgeable and appropriately trained assigned to administer and review these programs on a continuing basis to ensure their effectiveness in the workplace. Individuals such as human resource professionals, risk managers, safety managers, industrial hygienists and medical professionals are the most appropriate to administer these programs. Additionally, safety and health committees and other suitably trained and experienced employees may also help administer and review these programs.

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. The standard should be referenced to ensure that all requirements are being met.)*

Asbestos Policy
(Ref. 29 CFR 1910.1001)

Permissible Exposure Limits (PELs)

Time-Weighted Average (TWA)—The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter of air (0.1 f/cc) as averaged over an 8-hour day.

Excursion Limit (EL)—The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of 30 minutes.

OSHA has adopted the term "excursion limit" to refer to the short-term permissible exposure limit to be consistent with the terminology used by the American Conference of Governmental Industrial Hygienists (ACGIH).

Exposure Monitoring

Except for brake and clutch repair where a "preferred" control method is used, we have assessed all asbestos operations for their potential to generate airborne fibers.

Initial monitoring has been performed and exposures are above the PEL and/or EL. For this reason, periodic monitoring will be conducted at intervals no greater than every six months. If either initial or periodic monitoring statistically indicates that employee exposures are below the PEL and/or EL, then we will discontinue monitoring for those employees whose exposures are represented by such monitoring.

We will reinitiate monitoring whenever there has been a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposures to asbestos above the PEL and/or EL, or when we have the reason to suspect that a change may result in new or additional exposures above the PEL and/or EL.

Affected employees and their representatives will be allowed to observe monitoring and notified in writing, either individually or by posting results in an accessible location within 15 working days after the receipt of the results of monitoring. This written notification will contain the corrective action being taken by the employer to reduce employee exposure to asbestos on or below the PEL and/or EL wherever monitoring results indicate that the PEL and/or EL has been exceeded. If monitoring is being observed in a regulated area, the observer must be provided proper protective clothing and equipment.

Medical Surveillance

The employer must institute a medical surveillance program for all employees who are or will be exposed to airborne concentrations of asbestos at or above the PEL and/or EL. All medical examinations and procedures will be performed by a licensed physician. Exams will be scheduled at a reasonable time and place and at no cost to the employee. At a minimum, such examinations will include a medical and work history; a complete physical examination with emphasis on the respiratory system, the cardiovascular system and the digestive tract; a chest X-ray; pulmonary function tests; respiratory disease standardized questionnaire and any additional tests deemed appropriate by the examining physician. These examinations will be made available annually.

An abbreviated standardized questionnaire (29 CFR Part 1910.1001, Appendix D, Part 2) will be administered to the employee as part of the periodic (annual) medical examination. Upon termination of employment, we will provide a termination of employment medical exam to the employee within 30 calendar days before or after the date of termination.

We will provide the examining physician with a copy of the standard and Appendixes D and E; a description of the affected employee's duties as they relate to his or her asbestos exposure; the employee's actual or anticipated exposure level; a description of any personal protective and respiratory equipment used or to be used; and information from previous medical examinations. Once the physician has completed the exam, we will obtain a written signed opinion from the physician.

The written opinion will contain the results of the medical examination and the physician's opinion as to whether the employee has any detailed medical conditions that would place the employee at an increased risk from exposure to asbestos, any recommended limitations on the employee or upon the use of personal protective equipment such as respirators, a statement that the employee has been informed by the physician of the results of the examination, and a statement that the employee has been informed by the physician of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure. The physician is not to reveal in the written opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to asbestos. We will provide a copy of the physician's written opinion to the affected employee within 30 days of its receipt.

Recordkeeping

We will keep an accurate record of all exposure measurements taken to monitor employee exposure to asbestos. This record will be kept for 30 years. We will also maintain an accurate record for each employee subject to medical surveillance. This record will be maintained for the duration of employment plus 30 years. In addition, the employer must maintain all employee training records for one year beyond the last date of employment by the employee.

All records will be made available to the commissioner of labor, affected employees, former employees and designated representatives in accordance with 29 CFR Part 1910.1020.

Where the handling, using or processing of any products made from or containing asbestos are exempted, we will establish and maintain accurate records of objective data that exempt these products. These records will be kept for the duration of the employer's reliance upon the data.

Where applicable, we will maintain records about the presence, location and quantity of asbestos-containing material and presumed asbestos-containing material in the building or facility. These records will be kept for the duration of our ownership and will be transferred to the successive owners.

Regulated Areas

We will establish and set apart a regulated area wherever airborne concentrations of asbestos and/or presumed asbestos-containing material exceed the PEL and/or EL. Only authorized personnel may enter regulated areas. All people entering a regulated area must be supplied with and are required to use an appropriate respirator.

No smoking, eating, drinking, chewing tobacco or gum, or applying cosmetics is permitted in regulated areas.

Warning signs must be provided and displayed at each regulated area and must be posted at all approaches to regulated areas. Where necessary, signs will bear pictures or graphics, or be written in appropriate language so that all employees understand them.

Warning labels will be affixed to all asbestos products (raw materials, mixtures, scrap) and to all containers of asbestos products, including waste containers, that may be in the workplace. The labels will comply with the Hazard Communication Standard's requirements.

Labels or material safety data sheets (MSDSs) are not required where asbestos fibers have been modified by a bonding agent, coating, binder or other materials, if the manufacturer can demonstrate that during handling, storing, disposing, processing or transporting no airborne concentrations of fibers of asbestos in excess of PEL and/or EL will be released or if asbestos is present in a product in a concentration of less than 1 percent.

Communication of Hazards

Building/Facility Owners Duties

Employees engaged in housekeeping activities in public and commercial buildings with installed asbestos-containing materials may be exposed to asbestos fibers.

We will inform and train employees performing housekeeping activities of the presence and location of asbestos-containing materials and presumed asbestos-containing materials that may have contaminated the area. We will keep records of the presence, location and quantity of asbestos-containing materials and presumed asbestos-containing materials present in the building for the duration of ownership and transfer these records to a successive owner.

Information and Training

We have developed a training program for all employees who are exposed to airborne concentrations of asbestos at or above the PEL and/or EL. Training will be provided prior to or at the time of initial assignment and at least yearly thereafter. The training program will inform employees about ways in which they can safeguard their health.

In addition, we will provide an awareness training course for employees who do housekeeping operations in facilities where asbestos-containing materials or presumed asbestos-containing materials are present.

The elements of the course must include the health effects of asbestos; locations; signs of damage and deterioration of asbestos-containing materials and presumed asbestos-containing materials; the proper response to fiber release episodes; and where the housekeeping requirements are found in the standard. This training will be held annually and conducted so that all employees understand it.

Methods of Compliance

Control Methods

To the extent feasible, engineering and work practice controls will used to reduce and maintain employee exposure at or below the PEL and/or EL.

We will design, construct, install and maintain local exhaust ventilation and dust collection systems according to the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2-1979.

We will provide a local exhaust ventilation system for all hand-operated and power-operated tools such as saws, scorers, abrasive wheels, and drills that produce or release fibers of asbestos.

We and our employees will only handle, mix, apply, remove, cut, score or work asbestos in a wet state to prevent employee exposure.

We and our employees will not remove cement, mortar, coating, grout, plaster or similar materials containing asbestos from bags, cartons or other containers that are being shipped without wetting, enclosing or ventilating them.

We and our employees will not sand floors containing asbestos.

We and our employees will not use compressed air to remove asbestos or materials containing asbestos unless the compressed air is used in conjunction with a ventilation system designed to capture the dust cloud created by the compressed air.

We will only authorize the use of a negative-pressure enclosure/HEPA1 vacuum system or a low-pressure/wet cleaning method during automotive brake and clutch inspection, disassembly, repair, and assembly operations. An equivalent method also can be used if we can demonstrate that the method being used achieves the required exposure reductions.

Where engineering and work practice controls have been instituted but are insufficient to reduce exposure to the required level, we will supplement them by using respiratory protection. When the PEL and/or EL is exceeded, we will establish and implement a written program to reduce employee exposure to or below the PEL and to or below the EL by means of engineering and work practice controls and by the use of respirators where required and permitted.

We will review and update our plan as necessary to reflect significant changes in the compliance program.

Employee rotation will not be used as a means of compliance with the PEL and/or the EL.

Respiratory Protection

Respirators will be selected, provided and used in the following circumstances:

- While feasible engineering and work practice controls are being installed or implemented
- During maintenance and repair activities, or other activities where engineering and work practice controls are not feasible
- In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the PEL and/or EL; and in emergencies.

Respirators will be selected from among those approved by NIOSH. We will also provide a powered, air-purifying respirator in lieu of any negative-pressure respirator when the employee chooses it and when the respirator provides adequate protection. All employees using respirators will follow the procedures identified in our respirator program.

Employees who use a filter respirator will use a high-efficiency filter and will change filters whenever an increase in breathing resistance is detected. Employees who wear respirators will be allowed to wash their faces and respirator facepieces whenever necessary to prevent skin irritation associated with respirator use. An employee will not be assigned to tasks requiring the use of respirators if a physician determines that the employee is unable to function normally wearing a respirator or that the employee's safety and health or that of others would be affected by the employee's use of a respirator.

In this case, we will employee to another job or give the employee the opportunity to transfer to a different job that does not require the use of a respirator.

Protective Clothing

For any employee exposed to airborne concentrations of asbestos that exceed the PEL or EL, we will provide PPE at no cost to the employee, and require the use of, protective clothing, such as coveralls or similar full-body clothing, head coverings, gloves and foot coverings. In addition, wherever the possibility of eye irritation exists, face shields, vented goggles or other appropriate protective equipment will be provided and worn.

Asbestos-contaminated work clothing will be removed in change rooms and placed and stored in closed, labeled containers that prevent dispersion of the asbestos into the ambient environment. Protective clothing and equipment will be cleaned, laundered, repaired or replaced to maintain effectiveness.

We will provide clean protective clothing and equipment at least weekly to each affected employee. We will also inform any person who launders or cleans asbestos-contaminated clothing or equipment of the potentially harmful effects of exposure to asbestos. In addition, we will ensure that the person doing the cleaning or laundering has been properly instructed on how to effectively prevent the release of airborne fibers in excess of the permissible exposure limits.

Contaminated clothing and equipment taken out of change rooms or the workplace for cleaning, maintenance or disposal will be transported in sealed impermeable bags or other closed impermeable containers and must be appropriately labeled.

Hygiene Facilities and Practices

Employees who are required to work in regulated areas will be provided with clean change rooms, shower facilities and lunchrooms. Change rooms will have two separate lockers or storage facilities—one for contaminated clothing, the other for street clothing. We will keep them far enough apart to prevent accidental contamination of the employee's street clothes. Employees are required to shower at the end of the shift and cannot leave the workplace wearing any clothing or equipment worn during the work shift.

No employee will enter lunchroom facilities with protective work clothing or equipment unless surface asbestos fibers have been removed by vacuuming or some other method that removes dust without causing the asbestos to become airborne. Employees must wash their hands prior to eating, drinking or smoking. Smoking is prohibited in regulated areas.

Housekeeping

All surfaces will be maintained as free as possible of accumulations of waste containing asbestos or asbestos dust. The preferred methods of cleanup are wet cleaning and/or vacuuming with HEPA-filtered vacuuming equipment. Compressed air will not be used to clean surfaces contaminated by asbestos at any time. Whichever cleanup method is used, the equipment will be used and emptied in a manner that minimizes the reentry of asbestos into the workplace.

We will ensure that all spills and sudden releases of asbestos-containing materials are immediately cleaned up, that sanding asbestos-containing floors is prohibited, and that low abrasion pads at speeds lower than 300 rpm and wet methods are used. If the floor has sufficient finish, brushing or dry buffing is permissible.

Asbestos waste, scrap, debris, bags, containers, equipment and asbestos-contaminated clothing consigned for disposal will be collected and disposed of in sealed, labeled, impermeable bags or other closed, labeled impermeable containers.

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. The standard should be referenced to ensure that all requirements are being met.)*

Bloodborne Pathogens, Exposure Control Plan (Ref. 29 CFR 1910.1030)

Purpose

The purpose of this exposure control plan is to:

- Eliminate or minimize employee occupational exposure to blood and/or certain other body fluids.
- Comply with the OSHA Bloodborne Pathogens Standard, 29 CFR 1910.1030.

Exposure Determination

OSHA requires a listing of job classifications in which employees have occupational exposure. Since not all the employees in these categories would be expected to incur exposure to blood or other potential infectious material (OPIM), tasks or procedures that would cause these employees to have occupational exposure must also be listed to understand clearly which employees in these categories are considered to have occupational exposure. The job classifications and associated tasks for these categories are as follows:

Job Classification	**Task/Procedure**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Implementation Schedule and Methodology

OSHA requires that this plan include a schedule and method of implementation for the various requirements of the standard. The following complies with this requirement.

Compliance Methods

Universal precautions will be observed to prevent contact with blood or OPIM. All blood or OPIM will be considered infectious, regardless of the perceived status of the source individual. Engineering and work practice controls will be utilized to eliminate or minimize exposure to employees at this facility. Where occupational exposure remains after institution of these controls, personal protective equipment will also be utilized.

Handwashing facilities will be made available to employees who incur exposure to blood or OPIM. *When handwashing facilities are not feasible, either an antiseptic cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes will be provided. When using these alternatives, the employees must wash their hands with soap and running water as soon as feasible.*

Personal Protective Equipment (PPE)

(Insert job title of person responsible) is responsible for ensuring that the following provisions are met.

All PPE used will be provided without cost to the employee. PPE will be chosen based on the anticipated exposure to blood or OPIM. The PPE will be considered appropriate only if it does not permit blood or OPIM to pass through or reach the employee's clothing, skin, eyes, mouth or other mucous membranes under normal conditions of use and for the duration of time while the protective equipment will be used.

PPE Cleaning, Laundering and Disposal

All PPE will be cleaned, laundered or disposed of by the company at no cost to employees. All repairs and replacements will be provided by the company at no cost to employees.

Gloves

Gloves will be worn where it is reasonably anticipated that employees will have hand contact with blood, OPIM, non-intact skin and mucous membranes; when performing vascular access procedures; and when handling or touching contaminated items or surfaces.

Disposable gloves are not to be washed or decontaminated for reuse and are to be replaced as soon as practical when they become contaminated or if they are torn, punctured or their ability to function as a barrier is compromised. Utility gloves may be decontaminated for reuse, provided that the integrity of the glove is not compromised. Utility gloves will be discarded if they are cracked, peeling, torn, punctured or show other signs of deterioration or when their ability to function as a barrier is compromised.

Eye and Face Protection

Masks, in combination with eye protection devices such as goggles or glasses with solid side shields, or chin length side face shields must be worn whenever splashes, spray, splatter or droplets of blood or OPIM may be generated and eye, nose or mouth contamination can be reasonably anticipated. The following situations require such protection:

_____

_____

_____

Housekeeping

Note: A cleaning and decontamination schedule must be developed based on the type of contamination and the surfaces to be decontaminated. This schedule should include the frequency with which decontamination must be accomplished, such as immediately after a blood or body fluid release, once per shift, or after each procedure causing contamination of materials or surfaces.

Blood or OPIM release or spills must be reported to the supervisor or appropriately trained cleaning staff and surfaces must be decontaminated immediately or per the pre-established cleaning schedule. Decontamination may be accomplished by using sodium hypochlorite mixed with water in a 1:10 to 1:100 concentration. This must be mixed daily or immediately prior to use. Additionally other appropriate disinfectants may be used in accordance with the manufacturer's instructions as follows: *(insert list of predetermined appropriately selected EPA registered tuberculocidal disinfectants)*

_____

_____

_____

Sharps and Other Regulated Waste

Regulated waste, including sharps, must be placed in containers that are closeable and constructed to contain all contents and prevent leakage. Sharps containers must be stored upright during use and may not be opened by employees.

All sharps and regulated waste containers must be labeled or color-coded and closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport or shipping.

Note: Disposal of all regulated waste must be in accordance with all applicable federal, state and local regulations.

Laundry Procedures

Laundry contaminated with blood or OPIM will be handled as little as possible. Such laundry will be placed in appropriately marked bags (biohazard labeled or color-coded red) at the location where it was used. The laundry will not be sorted or rinsed in the area of use.

Note: If the facility ships contaminated laundry offsite to a laundry that does not utilize universal precautions in the handling of all laundry, the contaminated laundry must be placed in bags or containers that are labeled or color-coded.

Hepatitis B Vaccine and Post-Exposure Evaluation and Follow-up

We make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure and post-exposure follow-up to employees who have had an exposure incident.

(Insert job title of person responsible) will ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure follow-up including prophylaxis are:

- Made available at no cost to the employee.
- Made available at a reasonable time and place.
- Performed by, or under the supervision of, a licensed physician or other licensed healthcare professional (PLHCP).
- Provided according to the recommendations of the U.S. Public Health Service.

Hepatitis B vaccination will be made available after the employee has received training in occupational exposure and within 10 working days of initial assignment to all employees who have occupational exposure unless: the employee has previously received the complete hepatitis B vaccination series; antibody testing has revealed that the employee is immune; or the vaccine is contraindicated for medical reasons.

For employees who complete the hepatitis B vaccination series, antibody testing will be made available at no cost to the employee one to two months after completion of the series, as recommended by the U.S. Public Health Service.

Employees who decline the hepatitis B vaccination will sign the OSHA required declination form indicating their refusal (Refer to hepatitis B declination at the end of program). Any employee who initially declines hepatitis B vaccination, but later decides to accept vaccination while still covered by the standard, will be provided the vaccination series as described above.

If at a future date the U.S. Public Health Service recommends a routine booster dose of hepatitis B vaccine, such booster doses will be made available at no cost to the employee.

Post-Exposure Evaluation and Follow-up

All exposure incidents will be reported, investigated, and documented. When an employee incurs an exposure incident, it will be reported to *(Insert job title of person responsible)*. Following a report of an exposure incident, the exposed employee will immediately receive a confidential medical evaluation and follow-up, including at least the following elements:

- Documentation of the route of exposure, and the circumstances under which the exposure incident occurred. If the incident involves percutaneous injury from a contaminated sharp, appropriate information should be entered in the sharps injury log.
- Identification and documentation of the source individual, unless it can be established that identification is infeasible or prohibited by state or local law. The source individual's blood will be tested as soon as feasible, and after consent is obtained, to determine HBV and HIV infectivity. If consent is not obtained, *(Insert job title of person responsible)* will establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the blood (if available) will be tested and the results documented.
- Results of the source individual's testing will be made available to the exposed employee, and the employee will be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

Collection and testing of blood for hepatitis B virus (HBV) and human immunodeficiency virus (HIV) serological status will comply with the following:

- The exposed employee's blood will be collected as soon as feasible and tested after consent is obtained.
- The employee will be offered the option of having his or her blood collected for testing of the employee's HIV serological status. The blood sample will be preserved for up to 90 days to allow the employee to decide if the blood should be tested for HIV status.

Any employee who incurs an exposure incident will be offered post-exposure evaluation and follow-up in accordance with the OSHA standard. All post-exposure follow-up will be provided by *(Insert first aid clinic/doctor's office/urgent care/emergency room information)*.

Information Provided to the Health Care Professional

(Insert job title of person responsible) will ensure that the health care professional (HCP) responsible for the employee's hepatitis B vaccination is provided with a copy of the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030).

(Insert job title of person responsible) will ensure that the HCP who evaluates an employee following an exposure incident is provided with the following:

- A copy of the OSHA Bloodborne Pathogens Standard.
- A description of the exposed employee's duties as they relate to the exposure incident.
- Documentation of the route(s) of exposure and circumstances under which exposure occurred.
- Results of the source individual's blood testing.
- All medical records relevant to the appropriate treatment of the employee, including vaccination status.

Health Care Professional's Written Opinion

(Insert job title of person responsible) will obtain and provide the employee with a copy of the evaluating HCP's written opinion within 15 days of completion of the evaluation. For hepatitis B vaccination, the HCP's written opinion will be limited to whether the vaccination is indicated for an employee and whether the employee has received such vaccination.

For post-exposure follow-up, the HCP's written opinion will be limited to the following:

- A statement that the employee has been informed of the results of the evaluation.
- A statement that the employee has been told about any medical conditions resulting from exposure to blood or OPIM which may require further evaluation or treatment.

Note: The doctor must be informed that all other findings or diagnoses unrelated to the bloodborne pathogens exposure incident must remain confidential and must not be included in the written report from the doctor to the company.

Labels and Signs

(Insert job title of person responsible) will ensure that biohazard labels are affixed to containers of regulated waste, refrigerators and freezers containing blood or OPIM and other containers used to store, transport or ship blood or OPIM. The universal biohazard symbol will be used. Labels will be fluorescent orange or orange-red and will be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents loss or unintentional removal. Red bags or containers may be substituted for labels.

Information and Training

(Insert job title of person responsible) will ensure that training is provided at the time of initial assignment to tasks where occupational exposure may occur, and that training is repeated within 12 months of the previous training. Training will be tailored to the education and language level of the employee, and offered during the normal work shift.

Recordkeeping

Medical Records: *(Insert job title of person responsible)* is responsible for maintaining medical records as indicated below. These records are confidential and must be maintained for the duration of employment plus 30 years.

Training Records: *(Insert job title of person responsible)* is responsible for maintaining BBP training records. These records will be maintained for three years from the date of training.

*(**Note:** The declination form must include this exact wording with no additions or deletions. However, the information may be put on employer's letterhead or other company form.)*

Hepatitis B Vaccine Declination

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

_____

Employee's name (print)

_____

Employee's signature

_____

Date

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. The standard should be referenced to ensure that all requirements are being met.)*

Chemical Hygiene Plan
(Ref. 29 CFR 1910.1450)

The general intent of the chemical hygiene plan is:

1. To protect laboratory employees from health hazards associated with the use of hazardous chemicals in our laboratory,
2. To assure that our laboratory employees are not exposed to substances in excess of the permissible exposure limits as defined by OSHA in 29 CFR 1910 Subpart Z.

The plan will be available to all employees for review and a copy will be located in the following areas:

_____

This plan will be reviewed annually by _____ and updated as necessary. _____ is designated as the chemical hygiene officer (CHO). (See sections VI and VII for details.)

I. Standard Operating Procedures

The following standard operating procedures are in place for the safe handling of chemicals in our laboratory.

_____

_____

_____

_____

We also have the following programs (if applicable).

The written portion of the laser safety program is located in/at

_____.

The written portion of the radiation safety program is located in/at

_____.

The written portion of the biological safety program is located in/at

_____.

II. Criteria for Use of Control Measures to Reduce Employee Exposure to Hazardous Chemicals

A. The following operations must be performed in laboratory fume hoods:

_____

_____

B. The following operations must be performed in biological safety cabinets:

_____

_____

C. The following operations must be performed in glove boxes:

_____

_____

D. Respirators must be used in accordance with our respiratory protection policy and with the OSHA Respirator Standard, 29 CFR 1910.134. This policy and associated documentation are located at the following location

_____

for employee review.

E. Appropriate protective apparel compatible with the required degree of protection for substances handled must be used. _____ will advise employees on the use of gloves, gowns, eye protection, barrier creams, etc. Permeability charts are available at the following location: _____.

F. Employees will be instructed on the location and use of eyewash stations and safety showers. _____ is responsible for this instruction.

G. Employees will be trained initially and then at the following frequency:_____ , on the use of fire extinguishers and other fire protection systems.

III. Maintenance of Fume Hoods and Other Protective Equipment

A. *Fume hoods will* be inspected every _____ months by _____; adequacy of face velocity will be determined by _____; reports of hood inspections are filed at the following location:_____ for employee review.

B. *Biological safety cabinets* will be inspected every _____ months by _____; adequacy of face velocity will be determined by _____; reports of hood inspections are filed at the following location:_____ for employee review.

C. *Safety showers/eyewash stations* will be inspected every _____ months by _____; adequacy of face velocity will be determined by _____; reports of hood inspections are filed at the following location:_____ for employee review.

IV. Employee Information and Training

A. Each employee covered by the laboratory standard will be provided with information and training so that they are apprised of the hazards of chemicals present in their work area. This training will be given at the time of initial assignment and prior to new assignments involving different exposure situations. Refresher training will be given at the following frequency:_____.

B. The training/information session will include:
1. The contents of 29 CFR 1910.1450 and its appendixes. These will be available to employees at the following location:_____.
2. The availability and location of the written chemical hygiene plan.
3. Information on OSHA permissible exposure limits (PELs) where they exist and other recommended exposure limits.
4. Signs and symptoms associated with exposure to hazardous chemical in laboratories.
5. Location of reference materials, including all MSDSs received, on the safe handling of chemicals in laboratories.
6. Methods to detect the presence or release of chemicals (i.e., monitoring, odor thresholds).
7. The physical and health hazards of chemicals in laboratory work areas.
8. Measures to protect employees from these hazards, including:
   a. Standard operating procedures;
   b. Work practices;
   c. Emergency procedures;
   d. Personal protective equipment; and
   e. Details of the chemical hygiene plan.

C. The CHO is responsible for developing and updating standard operating procedures and ensuring that employees receive all appropriate training.

V. Prior Approval for Specific Laboratory Operations

Certain laboratory procedures that present a serious chemical hazard require prior approval by the CHO before work can begin. For this facility, these procedures include:

A. Work with select carcinogens;
B. Work with reproductive hazards;
C. Work with neurotoxins; and
D. Work with acutely hazardous chemicals.

These chemicals include:

_____

VI. Medical Consultation and Examination

We will provide to affected employees medical attention including follow-up examinations that our healthcare provider determines are necessary under the following circumstances:

A. Whenever an employee develops signs and symptoms associated with a hazardous chemical to which they may be exposed, the employee will be provided an opportunity to receive appropriate medical examination. The employee will contact the chemical hygiene officer to initiate the medical program; and/or

B. Where exposure monitoring reveals an exposure level routinely above the OSHA action level (AL) (or in the absence of an action level), exposure above the OSHA permissible exposure level (PEL) for OSHA-regulated substances for which there are medical monitoring and medical surveillance requirements, medical surveillance will be established for that employee.

Currently our laboratory uses the following chemicals that have a separate OSHA standard with medical surveillance requirements:

1. _____
2. _____
3. _____

C. Whenever an event takes place in the work area, such as a spill, leak, explosion or other occurrence resulting in the likelihood of a hazardous exposure, the affected employee, laboratory or custodial will be provided an opportunity for a medical consultation. This consultation is for the purpose of determining the need for a medical examination.

D. All medical examinations and consultations are provided by our designated healthcare provider(s). All aspects of these examinations are provided by a licensed physician or supervised by a licensed physician. These examinations are provided without cost to the employee, without loss of pay, and at a reasonable time and place.

E. The CHO will provide the following information to the physician:

1. Identity of the hazardous chemical to which the employee may have been exposed;
2. A description of the conditions of the exposure including exposure date if available; and
3. A description of signs and symptoms of the exposure that the employee is experiencing (if any).

F. The written opinion that the company receives from the physician must include:

1. Recommendations for future medical follow-up;
2. Results of examination and associated tests;
3. Any medical condition revealed that may place the employee at increased risk as the result of a chemical exposure; and
4. A statement that the employee has been informed by the physician of the results of the examination/consultation and told of any medical conditions that may require additional examination or treatment.

G. The material returned to us by the physician will not include specific findings and diagnoses that are unrelated to occupational exposure.

VII. Responsibilities Under the Chemical Hygiene Plan

The CHO is responsible for the implementation of the chemical hygiene plan and overseeing the chemical hygiene committee.

VIII. Additional Protection for Work With Select Carcinogens, Reproductive Toxins and Chemicals With High Acute Toxicity

When any of these chemicals are used, the following provision will be employed where appropriate:

1. Establishment of a designated area.
2. Use of containment devices such as fume hoods or glove boxes.
3. Procedures for safe removal of contaminated waste.
4. Decontamination procedures.

IX. Emergency Response

We will follow our company's emergency action plan under 1910.38 and/or plan under 1910.120 for all emergencies relating to the laboratory.

X. Laboratory Standard Training

All laboratory employees will be trained initially and periodically thereafter on the standard's requirements as well as standard operating procedures.

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. The standard should be referenced to ensure that all requirements are being met.)*

Compressed Gas Cylinders Policy
(Ref. 29 CFR 1910.101)

Safe Work Practices

- Cylinders should be stored in upright positions and immobilized by chains or other means to prevent them from being knocked over.
- Cylinders should be stored away from highly flammable substances such as oil, gasoline or waste.
- Cylinders should be stored away from electrical connections, gas flames or other sources of ignition, and substances such as flammable solvents and combustible waste material.
- Flammable gases should be separated from oxidizing gases in storage areas.
- Oxygen and fuel gas cylinders should be separated by a minimum of 20 feet when in storage.
- Storage rooms for cylinders should be kept dry, cool and well ventilated.
- Cylinders should be stored away from incompatibles, excessive heat, continuous dampness, salt or other corrosive chemicals, and any areas that may subject them to damage.
- Storage areas should be permanently posted with the names of the gases stored in the cylinders.
- All compressed gas cylinders should have their contents and precautionary labeling clearly marked on their exteriors.
- Compressed gas cylinder valve covers should be in place when cylinders are not in use.
- All compressed gas cylinders should be stored so they do not interfere with exit paths.
- All compressed gas cylinders should be subjected to periodic hydrostatic testing and interior inspection.
- All compressed gas cylinders should have a safety pressure relief valve.
- Cylinders should always be maintained at temperatures below 125ºF.
- The safety relief devices in the valve or on the cylinder should be kept free from any indication of tampering.
- Repair or alteration to the cylinder, valve or safety relief devices is prohibited. All alterations and repairs to the cylinder and valve must be made by the compressed gas vendor. Modification of safety relief devices beyond the tank or regulator should only be made by a competent person appointed by management.
- Painting cylinders without authorization is prohibited.
- Charged and full cylinders should be labeled and stored away from empty cylinders.
- The bottom of the cylinder should be protected from the ground to prevent rusting.
- All compressed gas cylinders should be regularly inspected for corrosion, pitting, cuts, gouges, digs, bulges, neck defects and general distortion.
- Cylinder valves should be kept closed at all times, except when the valve is in use.
- Compressed gas cylinders should be moved, even short distances, by a suitable hand truck.
- Using wrenches or other tools for opening and closing valves is prohibited.
- Suitable pressure-regulating devices should be kept in use whenever the gas is emitted to systems with pressure-rated limitations lower than the cylinder pressure.

- All compressed gas cylinder connections such as pressure regulators, manifolds, hoses, gauges, and relief valves should be checked for integrity and tightness.
- An approved leak-detection liquid should be used to detect flammable gas leaks.
- Procedures should be established for when a compressed gas cylinder leak cannot be remedied by simply tightening the valve. The procedures should include the following:
  - Attach tag to the cylinder stating it is unserviceable.
  - Remove cylinder to a well ventilated out-of-doors location.
  - If the gas is flammable or toxic, place an appropriate sign at the cylinder warning of these hazards.
  - Notify the gas supplier and follow its instructions as to the return of the cylinder.
- Employees should be prohibited from using compressed gases (air) to clean clothing or work surfaces.
- Compressed gases should only be handled by experienced and properly trained persons.

*(**Note:** This sample program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This program may be modified to meet the company's needs. The standard should be referenced to ensure that all requirements are being met.)*

Confined Space Entry Program (Permit Required) (Ref. 29 CFR 1910.146)

Purpose

To protect employees from the hazards associated with entry into permit required confined spaces and to develop procedures by which employees will enter such spaces.

Policy

All spaces owned or operated by the company that meet the definition of permit required confined spaces (PRCS) will be identified and appropriately marked. The company must control access to these spaces.

Employees are prohibited from entering any space meeting the definition of a PRCS unless the following conditions are met:

- The company determines that employees must enter permit required confined spaces to perform assigned duties. The employees are trained to safely perform these duties in a PRCS.

The confined space is rendered safe for entry:

- By issuance and compliance with the conditions of a permit.
- When the space is reclassified as a non-permit space without making entry into the space. (This does not apply to a PRCS with an actual or potential hazardous atmosphere.)
- Alternate entry procedures are performed.

Permits issued under the procedures in this policy will be limited to the duration of the job but no longer than one work shift. A new permit is required if work continues on a second shift or another day.

Definitions

Confined Space—a space that meets *all three* of the following conditions:

- Is large enough and so configure that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit (for example, thanks, vessels, silos, storage binds, hoppers, vaults and pit are spaces that have limited mean of entry).
- Is not designed for continuous human occupancy.

Permit Required Confined Space (Permit Space)—a confined space that has *one or more* of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Contains a material that has the potential for engulfing an entrant.
- Has an internal configuration such that the entrant could be trap or asphyxiated by inwardly converging walls or a floor that slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety and/or health hazard.

Duties and Responsibilities

Authorized Attendant—The trained individual stationed outside the permit space to monitor the authorized entrants and to perform all attendant duties. The attendant will:

- Remain outside the permit space during entry operations unless relieved by another authorized attendant.
- Perform non-entry rescues when specified by the company's rescue procedure.
- Know existing and potential hazards, including information on the mode of exposure, signs or symptoms, consequences, and physiological effects.
- Maintain communication with, and keep an accurate account of, those workers entering the permit space.
- Order evacuation of the permit space when a prohibited condition exists; when a worker shows signs of physiological effects of hazard exposure; when an emergency outside the confined space exists; or when the attendant cannot effectively and safely perform required duties.
- Summon rescue and other services during an emergency.
- Ensure that unauthorized people stay away from permit spaces or exit immediately if they have entered the permit space.
- Inform authorized entrants and the entry supervisor if any unauthorized person enters the permit space.
- Perform no other duties that interfere with the attendant's primary duties.

Authorized Entrant—The trained individual who enters the permit space. The entrant is required to:

- Know space hazards, including information on the means of exposure such as inhalation or dermal absorption, signs and symptoms, and consequences of the exposure.
- Use appropriate personal protective equipment properly.
- Maintain communication with attendants as necessary to enable them to monitor the entrant's status and alert the entrant to evacuate when necessary.
- Exit from the permit space as soon as possible when ordered by the attendant; when he or she recognizes the warning signs or symptoms of exposure; when a prohibited condition exists; or when an automatic alarm is activated.
- Alert the attendant when a prohibited condition exists or when warning signs or symptoms of exposure exist.

Entry Supervisor—The trained individual with the responsibility to ensure that acceptable entry conditions are present within a permit space under his or her jurisdiction; issuing a permit authorizing entry; overseeing entry operations; and terminating the entry and permit.

For each entry into a PRCS, the designated entry supervisor will:

- Perform the pre-entry duties of the entry supervisor on the permit space to be entered.
- Prepare an entry permit, reclassify the space as a non-permit space, or authorize alternate entry procedures, in compliance with the relevant procedures of this section.
- Perform the post-entry duties of the entry supervisor.
- Collect the permit from the attendant at the end of entry or prepare the documentation for reclassification or alternate entry.

For the duration of each entry into a permit space, the entrants and attendants will perform the duties outlined in these procedures, and will return the permit or documentation to (insert job title of responsible person) upon termination of entry.

Contractors

The company must ensure that every contract for work within an identified permit space or work within a non-permit space that will introduce a reclassifying hazard will:

- Notify the contractor that the space is a permit required confined space and of the hazards within the space.
- Require the contractor to control entry into the space by a permit system meeting the requirements of 29 CFR 1910.146.

- Require the contractor to eliminate any temporary hazards created by the work or notify the supervisor responsible for the space of any permanent hazards created by the work.

Field Staff

Managers of field staff authorized to enter permit spaces will:

- Procure the equipment necessary for entry testing and develop procedures to provide entry supervisors with the equipment as necessary.
- Designate and train entry supervisors, attendants and entrants.

Rescue Service Personnel

The company must identify emergency responders (either on- or off-site) who are capable of responding to an emergency in a timely manner. The responders must have appropriate rescue equipment, including respirators, and be trained how to use all equipment.

Rescue service personnel must receive the authorized entrants training and be trained to perform assigned rescue duties.

The standard also requires that all rescuers be trained in first aid and CPR. At a minimum, one rescue team member must be currently certified in first aid and CPR. Employers must ensure that practice rescue exercises are performed yearly and that rescue services are provided access to permit spaces so they can practice rescue operations. Rescuers also must be informed of the hazards of the permit space. This includes off-site rescue teams such as local fire and rescue companies.

If the company is relying on off-site rescue services, the company must notify the off-site rescue of the permit required confined space entry and ensure that the rescue service is on standby during entry.

Harnesses and Retrieval Lines

Authorized entrants who enter a permit space must wear a chest or full body harness with a retrieval line attached to the center of their backs near shoulder level or above their heads. Wristlets may be used if the company can demonstrate that the use of a chest or full body harness is not feasible or creates a greater hazard.

The other end of the retrieval line must be attached to a mechanical device or a fixed point outside the permit space. A mechanical device must be available to retrieve someone from vertical type permit spaces more than 5 feet (1.52 m) deep.

Material Safety Data Sheet

If an injured entrant is exposed to a substance for which a material safety data sheet (MSDS) or other similar written information is required to be kept at the worksite, that MSDS or other written information must be made available to the medical facility personnel treating the exposed entrant.

Training

All Employees

The respective supervisor will ensure that each employee receives awareness training on:

- The characteristics of a confined space.
- The characteristics of a permit required confined space.
- Whether they are allowed to enter permit required confined spaces.
- Required actions when working around or near a permit space entry.
- The authority of authorized attendants and entry supervisors.

Training will be required:

- During orientation.
- Prior to entry into a permit required confined space.
- Whenever the supervisor becomes aware that the employee has failed to follow the instructions provided in the training.

The supervisor will provide verification of training to: (*insert job title of responsible person*).

Entry Supervisors, Attendants and Entrants

The supervisor will ensure that employees designated as entry supervisors, attendants and entrants receive training in:

- The requirements of this policy and any procedures.
- The duties, authority and responsibilities of entry supervisors, attendants, lead entrants and entrants.
- The types of hazards expected to be encountered in permit spaces.
- The calibration, use, care and cleaning of equipment expected to be used during entry operations
- The performance of pre-entry actions expected to be required in permit spaces.

Training will be provided:

- Prior to assignment or authorization of duties within permit spaces.
- Within one month of revisions to this policy or procedures. Assignment or authorization for permit space entry will be suspended until training is completed.
- Whenever the supervisor becomes aware that an employee is deviating from the procedures of this policy. Assignment or authorization for permit space entry will be suspended until training is completed.
- Annually.

The company will certify that each affected employee has successfully completed training.

The certification must include at least the following:

- Employee name
- Name, signature or initials of the trainer
- Dates of training

Additionally, the certification may include a synopsis of the topics covered, copies of materials used during training such as handouts and presentations, and copies of tests (if used) to determine trainee understanding and proficiency, and other documentation deemed appropriate by the company. The certification must be maintained by the company and a copy may be provided to the employee.

Program Review

The company will review the effectiveness of the program annually, using the canceled permits and other documentation from the preceding 12 months, entry supervisor comments, and other available information. If no entries were made during the preceding 12 months, no annual review is required.

The entry supervisor, authorized attendant or entrant may make recommendations to management at any time to make changes in procedures to address and correct weaknesses in the procedures.

The entry supervisor or unit manager may notify the company at any time of potential weaknesses in policy or procedures. The company will view and initiate whatever changes necessary to address confirmed weaknesses.

Retention of Records

Canceled permits and other documentation will be retained by the company not less than one year following the date of entry. Permits will then be retained as an employee exposure record if applicable.

Confined Space Entry Permit Example #1

Date and time issued: _____ Date and time expires: _____
Jobsite/space I.D.: _____ Job supervisor: _____
Equipment to be worked on: _____ Work to be performed: _____
Entrants name(s): _____
Stand-by personnel: _____

1. Atmospheric checks:

Time	_____	
Oxygen	_____	%
Explosive	_____	% L.F.L.
Toxic	_____	PPM

2. Tester's signature: _____

3. Source isolation (no entry):

	Yes	No	N/A
Pumps or lines blinded	☐	☐	☐
Disconnected or blocked	☐	☐	☐

4. Ventilation modification:

	Yes	No	N/A
Mechanical	☐	☐	☐
Natural ventilation only	☐	☐	☐

5. Atmospheric check after isolation and ventilation:

Oxygen	_____	%	>	19.5	<23.5%
Explosive	_____	% L.F.L	<	10	%
Toxic	_____	PPM	<	10	H_2S PPM
Time	_____				

Tester's signature: _____

6. Communication procedures: _____

7. Rescue procedures: _____

8. Entry, standby and backup persons: _____

	Yes	No	N/A
Successfully completed required training?	☐	☐	☐
Is it current?	☐	☐	☐

9. Equipment

	Yes	No	N/A
Direct reading gas monitor-tested	☐	☐	☐
Safety harnesses and lifelines for entry and standby persons	☐	☐	☐
Hoisting equipment	☐	☐	☐
Powered communications	☐	☐	☐
SAR or SCBA for entry and standby persons	☐	☐	☐
Protective clothing	☐	☐	☐
All electric equipment listed Class I, Division I, Group D and nonsparking tools	☐	☐	☐

10. Periodic atmospheric tests:

Oxygen	_____	% Time	_____	Oxygen	_____	% Time	_____
Oxygen	_____	% Time	_____	Oxygen	_____	% Time	_____
Explosive	_____	% Time	_____	Explosive	_____	% Time	_____
Explosive	_____	% Time	_____	Explosive	_____	% Time	_____
Toxic	_____	% Time	_____	Toxic	_____	% Time	_____
Toxic	_____	% Time	_____	Toxic	_____	% Time	_____

We have reviewed the work authorized by this permit and the information contained herein. Written instructions and safety procedures have been received and are understood. Entry cannot be approved if any squares are marked in the "No" column. This permit is not valid unless all appropriate items are completed.

Permit prepared by: (supervisor)	_____	_____
Approved by: (unit supervisor)	_____	_____
Reviewed by: (operations personnel)	_____	_____
	(Printed name)	(Signature)

Confined Space Entry Permit Example #2

Date: _____

Site location and description: _____

Purpose of entry: _____

Supervisor(s) in charge of crews: _____

Crew Phone # _____

Communication procedures: _____

Rescue procedures (phone numbers at bottom): _____

Requirements Completed	Date	Time
Lockout/de-energize/verify		
Line(s) broken-capped-blanked		
Purge (flush and vent)		
Ventilation		
Secure area (post and flag)		
Breathing apparatus		
Resuscitator—inhalator		
Standby safety personnel		
Full body harness with “D” ring		
Emergency escape retrieval equipment		
Lifelines		
Fire extinguishers		
Lightning (explosive proof)		
Protective clothing		
Respirator(s) (air-purifying)		
Burning and welding permit		

Note: Items that do not apply enter N/A in the blank.

**Record continuous monitoring results every two hours

Continuous monitoring** Test(s) to be taken	Permissible entry level	Results	Results	Results	Results	Results
Percent of oxygen	19.5% to 23.5%					
Lower flammable limit	Under 10%					

See Appendix D-2 in 1910.146 for prior table layout.

*Short-term exposure limit: Employee can work in the area up to 15 minutes.
+8-hour time-weighted average: Employee can work in area 8 hours (longer with appropriate respiratory protection).
Remarks:
_____

Gas tester name and check #	Instrument(s) used	Model and/or type	Serial and/or unit #

Standby person(s)	Check #	Instrument(s)	Check #	Confined space entrant(s)	Check #

Supervisor authorizing—all conditions satisfied _____
Department/phone: _____
Phone # for ambulance: _____
Phone # for fire department: _____
Phone # for rescue: _____
Phone # for gas company: _____

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. The standard should be referenced to ensure that all requirements are being met.)*

Dipping and Coating Operations Policy
(Ref. 29 CFR 1910.124)

All employees that work in the spray finishing area should follow the work practices outlined below.

Safe Work Practices

- Follow the permit required confined space procedures whenever entering a dip tank.
- Before entering a tank for cleaning purposes, drain contents of tank and open cleanout doors. Ventilate and clear pockets where hazardous vapors may have accumulated.
- Inspect hoods and ventilation ductwork for corrosion and damage at least quarterly, after any shutdown.
- Inspect all dipping and coating equipment, including covers, drains, overflow piping and electrical and fire-extinguishing systems and promptly correct any deficiencies routinely.
- Use respirators and other appropriate PPE as needed for the work being conducted.
- Before conducting any welding on dip tanks, ensure that they are thoroughly cleaned of solvents and vapors.
- No eating and drinking in work area.
- Smoking is prohibited in work area.

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. The standard requires the company to maintain a written copy of the procedures outlined in paragraph (b)(2) of the standard. The written procedures may be in the form of a copy of paragraph (b) of 1910.333).*

Electrical Safety-Related Work Practices Program (Ref. 29 CFR 1910.331–335)

A. Scope

Safety-related work practices will be in use by our employees to prevent electric shock or other injuries resulting from either direct or indirect electrical contact, when work is performed near or on equipment or circuits that are or may be energized. The specific safety-related work practices will be consistent with the nature and extent of the associated electrical hazards. The content of this electrical safe work practice is as required in OSHA Subpart S (Electrical), 29 CFR 1910.331–335.

This program covers the servicing and maintenance of machines and equipment that have not been placed in an electrically safe working condition and the installation/removal of main disconnect switches on bus ducts. Conductors and parts of electric equipment that have been de-energized but have not been locked out or tagged will be treated as energized parts. Any machine or equipment that has not been shut down per our lockout/tagout procedures will not be considered to be electrically safe.

B. Covered Employees

The provisions of these procedures cover electrical safety-related work practices for both qualified persons (those who have training in avoiding the electrical hazards of working on or near exposed-energized parts) and unqualified persons (those with little or no such training) working on, near or with the following installations:

- Premises Wiring—Installations of electric conductors and equipment within or on buildings or other structures, and on other premises such as yards, parking and other lots, and industrial substations.
- Wiring for Connections to Supply—Installations of conductors that connect to the supply of electricity.
- Other Wiring—Installations of other outside conductors on the premises.
- Optical Fiber Cable—Installations of optical fiber cable where such installations are made along with electric conductors.
- Bus Duct Switches—Installation and removal of bus duct switches on energized busses.

Qualified persons (i.e., those permitted to work on or near exposed energized parts) will, at a minimum, be trained in and familiar with the following:

- The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment.
- The skills and techniques necessary to determine the nominal voltage of exposed live parts.

C. Training

The training requirements contained in this document apply to employees who face a risk of shock that is not reduced to a safe level by the installation as required by the National Electrical Code and 29 CFR 1910 Subpart S, Electrical.

Other employees who also may reasonably be expected to face comparable risk of injury due to electric shock or other electrical hazards must also be trained.

Employees who are covered by the scope of this policy, but who are not qualified persons will also be trained in and familiar with any electrical safety-related practices not specifically addressed but which are necessary for their safety.

The training required will be of the classroom or on-the-job type (preferably both). The degree of training provided will be determined by the risk to the employee.

D. Selection and Use of Work Practices

Safety-related work practices will be used to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits that are or may be energized. The specific safety-related work practices will be consistent with the nature and extent of the associated electrical hazards:

- De-energized parts—Live parts to which an employee may be exposed will be de-energized before the employee works on or near them, unless the employer can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be de-energized if there will not be increased exposure to electrical burns or to explosion due to electric arcs.
- Energized parts—If the exposed live parts are not de-energized (i.e., for reasons of increased or additional hazards or infeasibility), other safety-related work practices will be used to protect employees who may be exposed to the electrical hazards involved. Such work practices will protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. When working on energized parts, the appropriate PPE will be used.

Note: *Examples of work that may be performed on or near energized circuit parts because of infeasibility due to equipment design or operational limitations include testing of electric circuits that can only be performed with the circuit energized (troubleshooting) and work on circuits that form an integral part of a continuous industrial process that would otherwise need to be shut down completely to permit work on one circuit or piece of equipment.*

Lockout/Tagout

While any employee is exposed to contact with parts of fixed electric equipment or circuits that have been de-energized, the circuits energizing the parts will be locked out or tagged (or both) in accordance with the requirements of this paragraph in the following order:

- Procedures will be in place before equipment may be de-energized.
- Circuits and equipment to be worked on will be disconnected from all electrical energy sources.
- Stored electrical energy that poses a hazard to workers will be released.
- Stored nonelectrical energy in devices that could re-energize electric circuit parts will be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.
- A lock and a tag will be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed, except as provided below.
- Each tag will contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.
- If a lock cannot be applied, or if the employer can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.
- A tag used without a lock as permitted above, will be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. Examples include the removal of an isolating circuit element, blocking of a controlling switch or opening of an extra disconnecting device.
- A lock may be placed without a tag only under the following conditions:
  - Only one circuit or piece of equipment is de-energized.
  - The lockout period does not extend beyond the work shift.
  - Employees exposed to the hazards associated with re-energizing the circuit or equipment are familiar with this procedure.
- Before any circuits or equipment can be considered and worked as de-energized:
  - A qualified person will operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.
  - A qualified person will use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and will verify that the circuit elements and equipment parts are de-energized.

- Before circuits and equipment are re-energized, even temporarily, the following requirements will be met, in the order given:
  - A qualified person will conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds and other such devices have been removed so that the circuits and equipment can be safely energized.
  - Employees exposed to the hazards associated with re-energizing the circuit or equipment will be warned to stay clear of circuits and equipment.
  - Each lock and tag will be removed by the employee who applied it or under his or her direct supervision. However, if the employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that the employer ensures that the employee who applied the lock or tag is not available at the workplace and is aware that the lock or tag has been removed before he or she resumes work at that workplace.
  - There will be a visual determination that all employees are clear of the circuits and equipment.

Working on or Near Energized Equipment

This section applies to work performed on exposed live parts (involving either direct contact or contact by means of tools or materials) or near enough to them for employees to be exposed to any hazard they present.

Only qualified persons may work on electric circuit parts or equipment that has not been de-energized under the procedures of these standards. Such individuals will be capable of working safely on energized circuits and will be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

Illumination—Employees may not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to perform the work safely. Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts. Employees may not reach blindly into areas that may contain energized parts.

Conductive Materials and Equipment—Conductive materials and equipment that are in contact with any part of an employee's body will be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If an employee must handle long dimensional conductive objects (such as ducts or pipes) in areas with live parts, the hazard must be minimized by the use of insulation, guarding or material handling techniques.

Note: *Nonconductive fish tapes must be used when pulling wire through conduit that contains energized conductors or when entering an enclosure with exposed live parts.*

- Portable ladders—Portable ladders must be of the nonconductive type (wood or fiberglass) if they are used where the employee or the ladder could contact exposed energized parts.
- Conductive apparel—Conductive articles of jewelry and clothing (such as bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread or metal headgear) may not be worn if they might contact exposed energized parts unless they are rendered nonconductive by covering, wrapping or other insulating means.
- Housekeeping duties—Where live parts present an electrical contact hazard, employees may not perform housekeeping duties in such close proximity to the parts that there is a possibility of contact unless adequate safeguards (such as insulating equipment or barriers) are provided. Electrically conductive cleaning materials may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.
- Interlocks—Only a qualified person following the requirements of this section may defeat an electrical safety interlock, and then only temporarily while he or she is working on the equipment. The interlock system will be returned to its operable condition when this work is completed.
- Confined or enclosed work spaces—When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, the employer will provide, and the employee will use, protective shields, protective barriers or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels and the like will be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

- Overhead lines—Employees will not work on or near (within 12 feet) overhead lines. This 12-foot barrier includes any conductive object in that space. OSHA provides specific instructions regarding work on overhead lines. Refer to Subpart S—Electrical, 1910.333(c)(3) for more detail.

Use of Equipment

Portable Electric Equipment—This section applies to the use of cord-and-plug connected equipment, including flexible cord sets (extension cords).

Extension Cord Use

- Employees using extension cords (drop cords) to power tools and/or equipment for the performance of construction, maintenance, repair or demolition will use GFCI protection. This pertains to any part of the company, both inside and outside.
- All extension cords must be grounding type, made with UL listed parts, and be in good physical condition.
- Extension cords may not be lengthened or repaired with tape.
- Power outlet strips are for equipment needing surge protection (e.g., computers).
- Extension cords will not be run through holes in walls, ceilings or floors.
- Extension cords may not be plugged into power strips. Power strips may not be connected to each other (i.e., "piggy-backed").
- An extension cord should not be run across high traffic areas or used in applications where potential damage to the cord might occur:
  - The use of an extension cord must not create a trip hazard.
  - Extension cords will not be attached to building surfaces or used in lieu of fixed wiring of a structure.
  - Extension cords will not be run through doorways or windows or concealed behind walls, ceilings or floors.

Handling—Portable equipment will be handled in a manner that will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment. Flexible cords may not be fastened with staples or otherwise hung in such a fashion as could damage the outer jacket or insulation.

Visual Inspection—Portable cord-and-plug connected equipment and flexible cord sets (extension cords) will be visually inspected before use on any shift for external defects and evidence of possible internal damage:

- Cord-and-plug connected equipment and extension cords that remain connected once they are put in place and are not exposed to damage need not be visually inspected until they are relocated.
- Defective or damaged items will be removed from service until repaired.

Grounding Type Equipment—A flexible cord used with grounding type equipment will contain an equipment grounding conductor:

- Attachment plugs and receptacles may not be connected or altered in a manner that would prevent proper continuity of the equipment grounding conductor at the point where plugs are attached to receptacles. Additionally, these devices may not be altered to allow the grounding pole of a plug to be inserted into slots intended for connection to the current carrying conductors.
- Adapters (i.e., "cheaters") that interrupt the continuity of the equipment grounding connection may not be used.

Conductive Work Locations—Portable electric equipment and flexible cords used in highly conductive work locations (such as those inundated with water or other conductive liquids) or in job locations where employees are likely to contact water or conductive liquids will be approved for those locations.

Connecting Attachment Plugs—Employees' hands may not be wet when plugging and unplugging flexible cords and cord and plug-connected equipment, if energized equipment is involved.

- Energized plug and receptacle connections may be handled only with insulating protective equipment if the condition of the connection could provide a conducting path to the employee's hand.

- Locking type connectors will be properly secured after connection.

Electric Power and Lighting Circuits

Routine Opening and Closing of Circuits—Load-rated switches, circuit breakers or other devices specifically designed as disconnecting means will be used for the opening, reversing or closing of circuits under load conditions. Cable connectors not of the load break type, fuses, terminal lugs and cable splice connections will not be used for such purposes, except in an emergency.

Reclosing Circuits After Protective Device Operation—After a circuit is de-energized by a circuit protective device, the circuit may not be manually re-energized until it has been determined that the equipment and circuit can be safely energized. The repetitive manual reclosing of circuit breakers or re-energizing circuits through replaced fuses is prohibited.

Note: Circuit breakers or fuses can only be energized after an overload condition has been determined. If a fault condition exists, the circuit must be tested and determined safe before the circuit can be energized. Circuit breakers can be reset; however, repetitive reclosing is prohibited. The problem should be traced to the root cause if a circuit breaker trips twice in succession.

Overcurrent Protection Modification

Overcurrent protection of circuits and conductors may not be modified, even on a temporary basis, beyond that allowed in the installation safety requirements for overcurrent protection.

Test Instruments and Equipment

- Use—Only qualified persons may perform testing work on electric circuits or equipment.
- Visual inspection—Test instruments and equipment and all associated test leads, cables, power cords, probes and connectors will be visually inspected for external defects and damage before the equipment is used. If there is a defect or evidence of damage that might expose an employee to injury, the defective or damaged item will be removed from service, and no employee may use it until necessary repairs and tests to render the equipment safe have been made.
- Rating of equipment—Test instruments and equipment and their accessories will be rated for the circuits and equipment to which they will be connected and will be designed for the environment in which they will be used.

Occasional Use of Flammable or Ignitable Materials

Where flammable materials are present only occasionally, electric equipment capable of igniting them will not be used unless measures are taken to prevent hazardous conditions from developing.

Safeguard for Personnel Protection

Personal Protective Equipment—Employees working in areas where there are potential electrical hazards will be provided with and will use electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed:

- Protective equipment will be maintained in a safe, reliable condition and will be periodically inspected or tested, as required by 29 CFR 1910.137.
- If the insulating capability of protective equipment may be subject to damage during use, the insulating material will be protected. (For example, an outer covering of leather is sometimes used for the protection of rubber insulating material.)
- Employees will wear nonconductive head protection wherever there is a danger of head injury from electric shock or bums due to contact with exposed energized parts.
- Employees will wear protective equipment for the eyes or face wherever there is danger of injury to the eyes or face from electric arcs or flashes or from flying objects resulting from electrical explosion.

When working near exposed energized conductors or circuit parts, each employee will use insulated tools or handling equipment if the tools or handling equipment might make contact with such conductors or parts. If the insulating capability of insulated tools or handling equipment is subject to damage, the insulating material will be protected:

- Fuse handling equipment, insulated for the circuit voltage, will be used to remove or install fuses when the fuse terminals are energized.
- Ropes and handlines used near exposed energized parts will be nonconductive.
- Protective shields, protective barriers or insulating materials will be used to protect each employee from shock, burns or other electrically related injuries while that employee is working near exposed energized parts that might be accidentally contacted or where dangerous electric heating or arcing might occur. When normally enclosed live parts are exposed for maintenance or repair, they will be guarded to protect unqualified persons from contact with live parts.

Note: *Cabinet doors and electrical enclosures should be kept closed. If, however, this is not possible due to the conditions that follow, additional precautions must be taken to minimize the extent of the hazard.*

This section covers situations where:

- Energized equipment is exposed and must be left unattended.
- The scope of the energized equipment is so large that the person working cannot monitor it.
- The equipment cannot otherwise be guarded against accidental intrusion by a passerby.

Alerting Techniques—The following alerting techniques will be used to warn and protect employees from hazards that could cause injury due to electric shock, burns or failure of electric equipment parts:

- Safety signs, safety symbols or accident prevention tags will be used where necessary to warn employees about electrical hazards that may endanger them, as required.
- Barricades will be used in conjunction with safety signs where it is necessary to prevent or limit employee access to work areas exposing employees to uninsulated energized conductors or circuit parts. Conductive barricades may not be used where they might cause an electrical contact hazard.
- Attendant—If signs and barricades do not provide sufficient warning and protection from electrical hazards, an attendant will be stationed to warn and protect employees.

Safe Work Practices

- Know the equipment and potential hazards—Define the scope of work.
- Submit the scope of work to your safety coordinator for approval.
- Analyze the hazards use engineered methods to mitigate hazards.
- Establish procedures as necessary.
- Use barricades or other means to prevent unqualified persons from crossing approach boundaries.
- Employees will employ insulating barriers to prevent themselves and others from leaning into or falling into live parts and to prevent live parts that might become loose from contacting other employees.
- Employees will wear safety glasses.
- Employees will not wear metallic personal items (e.g., jewelry, glasses, watches) while working on or near live parts.
- Employees will use nonconducting ladders when needed.
- Always assume a conductor is energized until proven otherwise.
- Employees will wear voltage rated gloves when using tools on or near live parts.
- Employees will use only PPE that is designed (approved or certified) for the hazard.

- Employees will use only insulated tools when working on or near live parts.
- Employees will use only tools and instruments that are designed for the system voltage.
- Employees will not bypass interlocks or safety devices that protect people against electrical shock except when absolutely necessary and then only with written approval from their supervisor.
- Whenever possible, do not work alone.
- Safety watch is required when deemed so by your supervisor. This person will be CPR trained and be familiar with removing all sources of power to the device being worked upon and have ready access to a phone in order to call 911 in case of emergency.
- When operating circuit breakers or fused switches. ALWAYS stand to the side NEVER directly in front of the device being operated.
- Employees should inspect electrical equipment for defective parts, faulty insulation, improper grounding, loose connections, ground faults and unguarded live parts and should take appropriate remedial action before working on or near live parts.
- Employees should work only where there is adequate clearance.
- Employees should not work on or near live parts that are in a hazardous location (e.g., in wet or damp areas or where there are corrosive or flammable atmospheres).
- Restrict unnecessary people from being in the work area.

Electrical Safety-Related Work Practices Self-Audit Checklist

Area: _____ Room: _____ Date: _____ Audit Performed by: _____

	Yes	No	N/A	Comments
Model written program available.	☐	☐	☐	_____
Training complete and documented.	☐	☐	☐	_____
Lockout/tagout program includes electrical safety-related work practices.	☐	☐	☐	_____

Selection and Use of Work Practices

	Yes	No	N/A	Comments
Minimum safe work distances established when work involves energized parts.	☐	☐	☐	_____
Illumination provided in all spaces containing exposed electrical conductors.	☐	☐	☐	_____
Measures taken to avoid inadvertent contact with energized parts in enclosed or confined spaces.	☐	☐	☐	_____
Measures taken to avoid inadvertent contact of conductive materials or equipment with energized parts during handling.	☐	☐	☐	_____
Portable ladders have nonconductive side rails.	☐	☐	☐	_____
Conductive apparel not worn unless rendered nonconductive.	☐	☐	☐	_____
Measures taken to avoid inadvertent contact with energized parts during housekeeping duties.	☐	☐	☐	_____
Electrical safety interlocks defeated only by a qualified person following specific procedures.	☐	☐	☐	_____

Use of Equipment

	Yes	No	N/A	Comments
Procedures for handling portable equipment implemented.	☐	☐	☐	_____
Procedures for working with extension cords implemented.	☐	☐	☐	_____
Only qualified persons allowed to perform test work.	☐	☐	☐	_____
Measures taken to prevent hazards from the occasional use of flammable materials near electrical equipment.	☐	☐	☐	_____

Safeguards for Personnel Protection

	Yes	No	N/A	Comments
Personal protective equipment appropriate for the electrical hazard provided and used.	☐	☐	☐	_____
Insulated tools and handling equipment used for work performed near exposed energized circuits.	☐	☐	☐	_____
Protective shields, barriers or insulating materials used near exposed electrical circuits or where dangerous electric heating or arcing may occur.	☐	☐	☐	_____
Appropriate alerting techniques used to warn and protect workers.	☐	☐	☐	_____

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. This program does not have to be in writing for employers with 10 or fewer employees. The standard should be referenced to ensure that all requirements are being met.)*

Emergency Action Plan
(Ref. 29 CFR 1910.38)

The intent of this plan is to ensure all employees a safe and healthful workplace. Those employees assigned specific duties under this plan will be provided the necessary training and equipment to ensure their safety. This plan applies to emergencies that could be reasonably expected in our workplace such as fire/smoke, tornadoes, bomb threats or chemical releases.

Emergency Plan Coordinators

Building/Department	Name/Title	Phone #

Coordinators are responsible for the proper inventory and maintenance of equipment. They may be contacted by employees for further information on this plan.

Plan Outline/Description

Means of Reporting Emergencies: All fires and emergencies will be reported by one or more of the following means as appropriate:

- Verbally to the coordinator during normal working hours.
- By telephone if after hours/weekends.
- By the building alarm system.

Note: The following numbers will be posted throughout the facility:

- Fire
- Police
- Ambulance
- Hazmat
- Poison Control

Alarm System Requirements: Alarm system requirements for notifying employees during an emergency are as follows:

- Provides warning for safe escape.
- Can be perceived by all employees.
- Alarm is distinctive and recognizable.
- Employees have been trained on the alarm system.
- Emergency phone numbers are posted.
- Emergency alarms have priority over all other communications.
- Alarm system is properly maintained.

Sounding the Alarm

The alarm signals for this facility are below:

- For fire: *(Insert signal)*
- For chemical release: *(Insert signal)*
- For hazardous weather: *(Insert signal)*
- Other: *(Insert signal)*

Evacuation Plans

Emergency evacuation escape route plans are posted in key areas of the facility. All employees will be trained on primary and secondary evacuation routes for each type of emergency, as well as storm/tornado shelter locations, and whether employees should exit the facilities or shelter-in-place or in some other internal area of the worksite.

For Building Evacuation

In the event of a fire/explosion evacuation, all occupants will promptly exit the building via the nearest exit. Go to your designated assembly point and report to your supervisor. Each supervisor (or designee) will account for each assigned employee via a head count. All supervisors will report their head count to *(insert job title of responsible person*) who will be located at *(insert evacuation location)* or accessible via cell phone or radio *(insert phone number or radio channel)*.

In the event of a chemical release, all affected employees will be given evacuation instruction by those in authority (supervisor, other) via: *(Insert alert)*. Each supervisor (or designee) will account for each assigned employee via head count. All supervisors will report their head count to (insert job title of responsible person). Under no circumstances will employees leave the worksite unless instructed to so by management or other authority.

Building Re-Entry

Once evacuated, no one will re-enter the building. Once the fire department or other responsible agency has notified *(insert job title of responsible person)* that the building is safe to re-enter, personnel will return to their work areas. If building re-entry is not permissible, employees will be given further instruction as applicable by those in authority (supervisor, fire department).

Hazardous Weather

A hazardous weather alert consists of *(insert alert)*. When a hazardous weather alert is made, all employees will immediately report to the closest refuge area. Stay in this area until notified by *(insert job title of responsible person)*.

Training

The personnel listed below have been trained to assist in the safe and orderly emergency evacuation of employees:

Task	Building/Department	Name/Title/Phone #
Fire Extinguisher/Hoses		
Evacuation Assistant		
Emergency Shutdown		

Employee training is provided when this plan is initiated, when employees' responsibilities change, when the plan changes, initially for new hires and annually for all employees. Subjects to be covered include:

- Emergency escape procedures/routes
- Fire extinguisher locations and proper use (when the use is required by the company)
- Procedures for accounting for employees and visitors
- Major facility fire hazards
- Fire prevention practices
- Means of reporting fires/emergencies (use and types of alarm systems)
- Names/titles of emergency coordinators
- Availability of the plan to employees
- Hazardous weather procedures
- Special duties as assigned to coordinators and those listed above.

Written records will be maintained for all training and provided to *(insert job title of responsible person)*.

*(**Note:** The following example program is a **best practice** and does not need to be in writing as there is not a specific standard for this hazard. Please modify or delete content to these policies as deemed necessary.)*

Ergonomics Policy

The number and severity of injuries resulting from physical demands can be substantially reduced by providing an alternative to manual lifting and is the primary goal of the ergonomics process in our company.

We will evaluate the effectiveness of our ergonomics efforts and follow-up on unresolved problems. Evaluation helps sustain the effort to reduce injuries and illnesses, track whether or not ergonomic solutions are working, identify new problems, and show areas where further improvement is needed. Evaluation and follow-up are central to continuous improvement and long-term success.

As solutions are introduced, we will ensure they are effective. Various indicators (e.g., OSHA 300 and 301 information data and workers' compensation reports) can provide useful empirical data at this stage, as can other techniques such as employee interviews. The purpose of the interviews is to provide a mechanism for ensuring that the solution is not only in place, but is being used properly. The same methods that are used to identify problems in many cases can also be used for evaluation.

Assessing the potential for work to injure employees in the food manufacturing industry is complex because the typical operations involve the repeated lifting, carrying and repositioning of materials. Material lifting and repositioning tasks can be variable, dynamic, and unpredictable in nature. As a result, specific techniques are used for assessing material lifting and repositioning tasks that are not appropriate for assessing the potential for injury associated with other nursing home activities.

An analysis of any material lifting and repositioning task involves conducting an assessment of the materials and the equipment to be used. This assessment allows employees to account for material characteristics while determining the safest methods for performing the task.

We have established routine maintenance schedules to ensure that the equipment is in good working order.

Employees will be trained before they lift or reposition materials, or perform other work that may involve risk of injury. Training will cover:

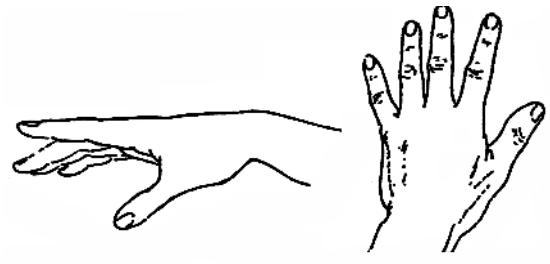
- Policies and procedures that should be followed to avoid injury, including proper work practices and use of equipment
- How to recognize MSDs and their early indications
- Advantages of addressing early indications of MSDs before serious injury has developed
- Procedures for reporting work-related injuries and illnesses as required by OSHA's injury and illness recording and reporting regulation (29 CFR 1904)

Cumulative Trauma Disorders

Studies show that workers with jobs requiring frequent hand exertion may develop cumulative trauma disorders. Cumulative trauma disorders are injuries that develop gradually from repeated stress to a particular body part. Such disorders are also called "overuse" or "wear-and-tear" repetitive strain disorders. They occur primarily in the upper extremity and include soft tissue injuries such as muscle strain, tendinitis, neuritis and carpal tunnel syndrome. A number of things contribute to cumulative trauma disorders. Standing in one position for long periods of time can cause discomfort or strain to muscles of the back and legs, because the muscles remain in a position of contraction without allowing for periods of relaxation or movement. Similarly, the height of a work area may contribute to muscle strain for a very short or very tall individual because he or she may be forced to reach beyond a comfortable point. Often work requires the active use of the hand or arm, making the upper extremity vulnerable to trauma. The upper extremity includes the shoulder, upper arm, elbow, forearm, wrist, hand and fingers. The arm and hand move through actions of the joints, muscles and tendons. Upper extremity movement can range from large, sweeping motion to fine, precise manipulation. Hands and arms work best in a neutral or natural position. Figure 3 illustrates and identifies various hand-wrist positions.

Figure 3

Hand-Wrist Positions



NORMAL
Hand in neutral position

FLEXION
Bending the wrist down toward the palm

EXTENSION
Bending the wrist up and back

RADIAL DEVIATION
Bending the wrist toward the thumb

ULNAR DEVIATION
Bending the wrist toward the little finger

SUPPINE POSITION
Palm up

The joints of the upper extremity include the shoulder, elbow, wrist and fingers. Joints are formed where ligaments connect the end of one bone to another. When joints are twisted beyond their normal range of motion, an injury called a sprain occurs. Muscles are fiber bundles that contract to produce movement. Aching and swelling can result from small strains to muscles. Other injuries may result from the tearing of muscle fibers or from a blow or crush that causes blood to seep out into a large area of the muscle.

The speed of work may be determined by the speed of a conveyor belt. For example, in chicken processing, the faster the conveyor line, the more frequent is the requirement for the cutting of chicken (the repetition of a specific task). Jobs that require frequent repetition of the task cause muscles to contract frequently, requiring more muscle effort and less recovery time. Force, for example, required to make a particular cut, either with a knife or scissors, can contribute to cumulative trauma disorders. Increasing the applied force increases muscle effort, decreases circulation to the muscles and causes greater muscle fatigue. Effort required to make a particular cut, either with a knife or scissors, can depend upon the sharpness of the tool. A dull instrument requires more force or exertion and contributes to cumulative trauma disorders.

Preventative Measures

Early recognition of problems and treatment of complaints have been very effective in reducing and preventing cumulative trauma disorders. Work methods should be examined and corrections made where practical and appropriate. Workplaces may need to be redesigned to better accommodate the area to the worker (ergonomic necessities). Workplace redesign may necessitate adjustable foot rests and stand/sit props to help relieve muscle strain and back pressure for workers in fixed, standing positions. Cushioned floor mats or shoes with cushioned soles will also be more comfortable for workers standing in one position. Frequent walk-around periods also help relieve muscle strain.

Stackable or adjustable work stands can raise shorter workers to a more comfortable work position. However, care must be taken to see that such stands do not create a fall or trip hazard. Conveyors should be designed so that the maximum reach for workers is no greater than 13"–18". Upward reaches should be no higher than shoulder level (preferably even lower); the higher the upward reach, the shorter should be the forward reach. The important factors in deciding the proper dimensions of a work station are the kind of work being done, the height at which the work will take place, and the size of the worker.

An effective occupational safety and health program to address ergonomic hazards in the meatpacking industry includes the following four major program elements: worksite analysis, hazard prevention and control, medical management, and training and education.

1. Worksite Analysis

Worksite analysis identifies existing hazards and conditions, operations that create hazards and areas where hazards may develop. This also includes close scrutiny and tracking of injury and illness records to identify patterns of traumas or strains that may indicate the development of cumulative trauma disorders.

2. Hazard Prevention and Control

Once ergonomic hazards are identified through the systematic worksite analysis discussed above, the next step is to design measures to prevent or control these hazards. Thus, a system for hazard prevention and control is the second major program element for an effective ergonomics program. Ergonomic hazards are prevented primarily by effective design of the workstation, tools and job. To be effective, an employer's program needs to use controls to correct or control ergonomic hazards including the following:

- Engineering controls
- Personal protective equipment (PPE)
- Work practice controls
- Administrative controls

3. Medical Management

Implementation of a medical management system is the third major element in the employer's ergonomics program. Proper medical management is necessary both to eliminate or materially reduce the risk of development of cumulative trauma disorders through early identification and treatment of signs and symptoms and to prevent future problems through development of information sources.

4. Training and Education

The fourth major program element for an effective ergonomics program is training and education. The purpose of training and education is to ensure that employees are sufficiently informed about the ergonomic hazards to which they may be exposed, so that they are able to participate actively in their own protection. Employees must be adequately trained about the employer's entire ergonomics program.

Ergonomic Stressors

Factors that increase risk for musculoskeletal disorder development are called ergonomic stressors. The ergonomic stressors that poultry processing workers may face include the following:

- Force
- Static postures
- Environmental factors
- Repetition
- Vibration
- Awkward postures
- Contact stress

Force—Physical effort required to lift, push, pull, grasp and pinch items in the work environment. Heavy lifting places high forces on the back. Other jobs that require high force exertions from the hand, wrist and shoulder. Force is often required to handle and control equipment, tools, raw materials and finished products.

Repetition—Performing the same motion or series of motions continually or frequently.

Awkward Postures—Body postures that deviate from normal resting or neutral positions place unnecessary stress on muscles, tendons and bones. Examples of awkward postures include reaching above shoulder height, kneeling, leaning over an assembly or sanding table, bending the wrist during spray operations, and twisting the body while lifting. See appendix B for visual presentations of neutral and awkward postures.

Static Postures—Assuming and holding any posture for a long period of time can place stress on the body, particularly if the posture is not neutral. Static postures can accelerate the development of fatigue and discomfort.

Vibration—Vibration is the physical exposure to rapidly oscillating tools or machinery. Powered hand tools or anywhere an operator comes in contact with a vibration source, such as a tow motor operator, are places to look for this stressor.

Contact Stress—Physical contact between the body and sharp edges of tools, equipment and products. Pressing the body against a hard, sharp edge, such as the edge of a work table, is an example of this stressor.

Environmental Factors—Cold, heat, lighting and noise are factors in the work environment that can directly influence worker comfort and can indirectly influence risk of injury through interaction with the above-mentioned physical stressors. Other environmental factors such as slick work surfaces that are found in many poultry processing plants can directly increase the risk of injury.

Many jobs combine **multiple stressors** in a single job. For example, a single job might combine awkward shoulder and back postures in reaching across the work table, force in lifting, exposure to vibration, repetitive wrist motions, and contact stress with a sharp work table edge. The combination of multiple stressors within a job or work task can create an increased risk of injury.

Identifying Problems

OSHA recommends that poultry processing facilities establish a three-step process to systematically identify ergonomic problems. This process should account not only for current workplace conditions but also for planned changes to existing and new facilities, processes, materials, and equipment. The three-step process for identifying ergonomic problems in poultry processing facilities includes:

- Gathering information from available sources;
- Conducting initial workplace surveys to determine which jobs need a closer analysis; and
- Performing ergonomic job hazard analyses of those workstations with identified risk factors.

Gathering Information From Available Sources

The first step in identifying ergonomic problems should be a review and analysis of available information. Information about problems or potential problems can be obtained from a variety of sources, including the OSHA 300 and 301 reports, first aid logs, reports of workers' compensation claims, accident and near-miss investigation reports, and insurance company reports. Employers can also gain useful information from employee interviews and surveys, as well as from reviews and observations of workplace conditions.

Conducting an Initial Workplace Survey

The second step is to conduct an initial workplace survey. An initial workplace survey is typically performed with an ergonomics checklist to look for relevant workplace risk factors. According to poultry processing employers, the most important risk factors in poultry processing facilities are:

- *Repetition*—performing the same motion or series of motions continually or frequently.
- *Force*—the amount of physical effort required to perform a task (such as heavy lifting) or to maintain control of equipment or tools.
- *Awkward and static postures*—assuming positions that place stress on the body, such as reaching above shoulder height, kneeling, squatting, leaning over a worktable, twisting the torso while lifting, as well as holding or using tools (e.g., knives or scissors) in a nonneutral or fixed position.
- *Vibration*—utilizing hand-held power tools that can increase the stress on the hands and arms.

Cold temperatures in combination with the above risk factors may also increase the potential for musculoskeletal disorders to develop. Many of the operations in poultry processing occur with a chilled product or in a cold environment. Not all of these risk factors will be present in every job, nor is the existence of one or all of these factors necessarily sufficient to cause injury. Employers, however, should examine these factors when screening and analyzing jobs, operations or workstations to determine which risk factors are present. Jobs and tasks that have multiple risk factors have a higher probability of causing musculoskeletal disorders.

Performing Ergonomic Job Hazard Analyses

The third step is to conduct a job hazard analysis of those jobs identified above as potentially hazardous. In many cases, job assessments can be accomplished by observation and discussing with employees the tasks they are performing.

Discussing tasks with employees helps to ensure that a complete picture of the process is obtained. An adequate analysis should identify all risk factors present in each studied task.

Implementing Solutions

OSHA recognizes that a variety of solutions may be needed in any given facility. OSHA recommends that employers train employees to use proper work practices. Proper work practices include proper use and maintenance of pneumatic and power tools, good cutting techniques, proper lifting techniques and good knife care. Using and maintaining effective PPE is also important.

For example, good fitting thermal gloves can help with cold conditions while maintaining the ability to grasp items easily.

Many poultry processors have found that administrative solutions can be used to reduce the duration, frequency and degree of exposure to risk factors. Some examples of administrative solutions used effectively by poultry processors follow:

- Job rotation may alleviate physical fatigue and stress of a particular set of muscles and tendons. To set up a job rotation system, employers typically classify the nature and extent of exertions of each task, and then create a schedule that rotates between high and low repetitions within the line and/or between bending and stretching movements in the same work area or whole plant as appropriate to reduce exposure. Also consider the body parts used and rotate so that body parts used repetitively or in awkward postures can either rest completely or work at slower rates and in better postures. Use a rotation schedule to address tasks considered to be high risk (e.g., using vibrating hand tools or deboning activities) or to minimize exposure to cold.
- Staffing “floaters” provide periodic breaks between scheduled breaks.
- New employees, reassigned employees and employees returning from an extended time off will need a conditioning or break-in period to get them accustomed to an activity and strengthen them for the physically demanding work they will be performing. To accommodate this, OSHA recommends that new and reassigned employees be gradually integrated into a full workload. OSHA also recommends that employees be assigned to an experienced trainer for job training and evaluation during the conditioning period.
- Allowing pauses relieves fatigued muscles and allows employees to rest affected muscle groups during that time period.
- Cross-train employees so that sufficient support is available for peak production, to cover breaks, to institute job enlargement programs and to provide additional rotation alternatives.
- Performing routine and preventive maintenance on equipment ensures that the equipment is working properly.

When combined with exposure to other risk factors, cold can increase the risk of developing a musculoskeletal disorder.

Employers typically limit cold exposure by providing a warm dry area and allowing frequent short breaks to allow workers to warm up. It is also important to use appropriate clothing and personal protective equipment when working in cold environments.

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. The standard should be referenced to ensure that all requirements are being met.)*

Fall Protection Plan
(Ref. 29 CFR 1910.66(f) and 269(g))

Types of Fall Protection Systems

- Articulating manlifts provided with a restraint system and full body harness to an anchor point below the waist (preferably at the floor level).
- Guardrails with toeboards.
- Personal fall arrest systems:
  - Anchor points (rated at 5,000 pounds).
  - Full body harness.
  - Restraint line or lanyard.
  - Shock absorbing lanyard.
  - Retractable lanyard.
  - Rope grabs.
  - Connectors (self-locking snap hooks).
- Engineered lifelines.
- Warning lines.
- Safety nets.
- Safety monitor systems.

Appropriate fall protection will be determined by the task (job) to be performed.

Fall protection is not needed if an employee or employees are on a low slope roof (less than 4/12 pitch) for inspection/observation only.

Note: Fall protection is required whenever an employee is above 4 feet in general industry and 6 feet on construction sites (except 10 feet on scaffolding and 15 feet during steel erection).

Fall Protection Guidelines—Options

Engineering Controls

Engineering controls will be the first option for selection whenever possible (i.e., light bulb changing, telescoping arm, changing valve, relocate at ground level) or utilizing a contractor in extremely hazardous areas.

Guardrails

On all projects, only guardrails made from steel, wood, and wire rope will be acceptable. All guardrail systems will comply with OSHA standards (i.e., withstand 200 pounds of force, 42" high, midrail, and toeboard). These guardrails will be placed in the following areas if necessary or feasible based on job location or requirements:

- On all open-sided floors.
- Around all open excavations or pits.
- On leading edges of roofs or mezzanines.

Personal Fall Protection Systems (PFAS)

All employees on any project that will be required to wear a personal fall arrest or restraint system will follow these guidelines:

- A full body harness will be used at all times.
- All personal fall arrest systems will be inspected before each use by the employee. Any deteriorated, bent, damaged, impacted or harness showing excessive wear will be removed from service.
- Connectors will be inspected to ensure they are drop forged, pressed or formed steel or are made of equivalent materials and that they have a corrosion-resistant finish as well as that all surfaces and edges are smooth to prevent damage to interfacing parts of the system.
- Verify that D rings and snap hooks have a minimum tensile strength of 5,000 pounds and that the D rings and snap hooks are proof tested to a minimum tensile load of 3,600 pounds without cracking, breaking or taking permanent deformation.
- Only shock absorbing lanyards or retractable lanyards are to be used so as to keep impact forces at a minimum on the body (fall arrest systems).
- Only nylon rope or nylon straps with locking snap hooks are to be used for restraints.
- All lanyards will have self-locking snap hooks.

Verify that unintentional disengagement of snap hooks is prevented by either of the following means:

- Snap hooks are a compatible size for the member to which they are connected.
- Locking type snap hooks are used.

Verify that unless the snap hook is a locking type and is designed for the following connections, snap hooks are not engaged in the following manners:

- Directly to webbing, rope or wire rope.
- To each other.
- To a D ring to which another snap hook or other connector is attached to a horizontal lifeline.
- To any object that is incompatibly shaped or dimensioned in relation to the snap hook such that unintentional disengagement could occur by the connected object being able to depress the snap hook keeper and release itself.

The following factors can affect total fall distance:

- Length of connecting means (i.e., lanyard length, use of carabineers, snap hooks).
- Position and height of anchorage relative to work platform/area (always keep above head whenever possible).
- Position of attachment and D ring slide on the full body harness.
- Deployment of shock absorber (max 42 inches).
- Movement in lifeline.
- Initial position of worker before free fall occurs (i.e., sitting, standing).

Calculating Total Fall Distance

It is the total length of shock absorbing lanyard plus the height of the person plus the location distance of the D ring from the work surface or platform.

Always allow a minimum of 6 feet of clearance above the ground, equipment, etc., at the end of the fall from the fall arrest point.

Engineered Lifeline

Lifeline systems must be designed and approved by an engineer or qualified person. Lifeline systems must be engineered to have appropriate anchorages, strength of line designed to hold X number of individuals connected to it, line strength to aid in the arrest of a fall, and durability to hold fallen employee(s) suspended until rescue can occur.

Warning Line System

All greater than 50 feet wide flat roof (i.e., roof with less than 4/12 slope) work that is performed 6 feet or further back from the edge of the roof can be completed by installing a warning line and using a safety monitor. If the roof is flat and less than 50 feet wide, a competent person safety monitor may be used.

Warning lines will consist of the following:

- Be erected 6 feet from the edge of the roof.
- Be constructed of stationary posts made of wood or metal.
- Wire or nylon rope and "Caution" tape will be strung from post to post and must be able to withstand 16 pounds of force.
- The entire perimeter of the roof where work is being performed will be guarded by the warning line.

If an employee must access an area within 6 feet of the roof for reasons *other* than exiting the roof via a ladder or fixed industrial ladder, another employee must monitor that individual and warn him or her of any dangers. If another employee is not available to act as a safety monitor, the employee must don a full body harness and attach a fall restraint lanyard to an anchor point to prevent reaching the edge of the roof.

Inspection of Fall Protection Systems

The following criteria will be utilized to maintain all equipment in good working condition.

Full Body Harness

Inspect before each use:

- Closely examine all of the nylon webbing to ensure there are no burn marks, which could weaken the material.
- Verify there are no torn, frayed, broken fibers, pulled stitches or frayed edges anywhere on the harness.
- Examine D ring for excessive wear, pits, deterioration, or cracks.
- Verify that buckles are not deformed or cracked and will operate correctly.
- Check to see that all grommets (if present) are secure and not deformed from abuse or a fall.
- Harness should never have additional punched holes
- All rivets should be tight, not deformed.
- Check tongue/straps for excessive wear from repeated buckling.

A competent person will conduct an annual inspection of all harnesses. The documentation will be provided to *(insert job title of responsible person)* and maintained for *(insert length of time to keep record)*.

Storage will consist of hanging in an enclosed cabinet, to protect from damage.

All harnesses that are involved in a fall will be removed from/tagged out of service immediately.

Lanyards/Shock Absorbing Lanyard

Before each use, the employee must:

- Check lanyard material for cuts, burns, abrasions, kinks, knots, broken stitches and excessive wear.
- Inspect the snap hooks for hook, locks and eye distortion.
- Check carabineer for excessive wear, distortion and lock operation.
- Ensure that all locking mechanisms seat and lock properly.
- Once locked, locking mechanism should prevent hook from opening.
- Visually inspect shock absorber for any signs of damage, paying close attention to where the shock absorber attaches to the lanyard.
- Verify that points where the lanyard attaches to the snap hooks are free of defects.

A competent person will conduct an annual inspection of all lanyards. The inspection documentation will be provided to *(insert job title of responsible person)* and maintained for *(insert length of time to keep record)*.

Storage will consist of hanging in an enclosed cabinet to protect from damage.

All lanyards that are involved in a fall will be destroyed.

Snap Hooks

Before each use, the employee will:

- Inspect snap hook for any hook and eye distortions.
- Verify there are no cracks, pitted surfaces, and eye distortions.
- The keeper latch should not be bent, distorted, or obstructed.
- Verify that the keeper latch seats into the nose without binding.
- Verify that the keeper spring securely closes the keeper latch.
- Test the locking mechanism to verify that the keeper latch locks properly.

A competent person will conduct an annual inspection of all snaphooks. The inspection documentation will be provided to *(insert job title of responsible person)* and maintained for *(insert length of time to keep record)*.

All snap hooks involved in a fall will be removed from/tagged out of service.

Self-Retracting Lanyards

Before each use, the employee will:

- Visually inspect the body to ensure there is no physical damage.
- Make sure all back nuts or rivets are tight.
- Make sure the entire length of the nylon strap is free of any cuts, burns, abrasions, kinks, knots, broken stitches and excessive wear and retracts freely.
- Test the unit by pulling sharply on the lanyard to verify that the locking mechanism is operating correctly.
- If manufacturer requires, make certain the retractable lanyard is returned to the manufacturer for scheduled annual inspections.

A competent person will conduct a monthly inspection of all self-retracting lanyards. The inspection documentation will be provided to *(insert job title of responsible person)* and maintained for *(insert length of time to keep record)*. Additionally, the lanyard will be inspected for proper function after every fall.

Tie-off Adaptors/Anchorages

- Inspect for integrity and attachment to solid surface.
- Annual inspection of all tie-offs and anchorages by a competent person with documentation.
- All tie-offs and anchorages will be destroyed and replaced after a fall.

Articulating Manlift

- Inspect before each use.
- Inspect/service per manufacturer's guidelines. Forklifts, scissors lifts and safety nets will be inspected at the beginning of each shift in use. Structural integrity of forklift basket will be checked per same schedule.
- Annual inspection of forklift basket will be completed by a competent person with documentation maintained.

Horizontal Lifelines

- Inspect before each use for structural integrity of line and anchors.
- Annual inspection by a competent person.

- Temporary systems—Daily visual inspection will be completed by a competent person.
- Temporary systems—Weekly, a complete structural inspection will be completed by a competent person.
- Permanent systems—Annual structural inspection will be completed by a competent person with future frequency of inspection defined based on conditions/controls present.

Storage and Maintenance of Fall Protection Equipment (Best Practice)

- Never store the personal fall arrest equipment in the bottom of a toolbox, on the ground or outside exposed to the elements (i.e., sun, rain, snow).
- Hang equipment in a cool dry location in a manner that retains its shape.
- Always follow manufacturer's recommendations for inspection.
- Clean with a mild, nonabrasive soap and hang to dry.
- Never force dry or use strong detergents in cleaning.
- Never store equipment near excessive heat, chemicals, moisture or sunlight.
- Never store in an area with exposures to fumes or corrosives elements.
- Avoid dirt and build-up on equipment.
- Never use this equipment for any purpose other than personal fall arrest.
- Once exposed to a fall, remove equipment from service immediately.

Training

The company will provide a fall prevention training program for each employee who might be exposed to fall hazards. The training program will include recognition of the hazards of falling and procedures to follow to minimize these hazards. Training materials will be reviewed to verify that each employee has been trained, as necessary, by a competent person qualified in the following areas:

- Nature of fall hazards in the work area.
- Correct procedures for erecting, maintaining, disassembling and inspecting the fall protection systems to be used.
- Use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones (CAZs) and other protection to be used.
- Role of each employee in the safety monitoring system when this system is used.
- The limitations on the use of mechanical equipment during the performance of roofing work on low sloped roofs.
- Correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
- Role of employees in fall protection plans.
- Requirements contained in 29 CFR 1926, Subpart M.
- Understanding and following all components of this fall protection program.

The company will maintain a written certification record for employee training. The record must contain the following information:

- Name or other identity of the employee trained.
- Date(s) of the training.
- Signature of the person who conducted the training or the signature of a company official.

When the supervisor has reason to believe that any affected employee who has already been trained does not have the understanding and skill required, the supervisor will retrain that employee. Retraining is required at least in the following circumstances:

- Changes in the workplace render previous training obsolete.
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete.
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

Enforcement (Best Practice)

- Subject to discipline.
- Documentation of any violations will be kept in the staff member's personnel file.
- Any employee not following the fall protection program or a portion of this procedure will be subject to disciplinary action.

Rescue Procedures

In the event of a fall, the following people will be notified as soon as possible to initiate rescue:

- Rescue personnel on-site.
- Supervisor/management.
- Fire department or emergency medical services if necessary.

At the beginning of any work activity where fall protection is required, rescue plans must be identified and discussed with all employees in case of a fall. The supervisor will develop the rescue plans.

All employees involved in a fall arrest or fall will be sent for a medical evaluation to determine extent of injuries, if any.

Program Evaluation

This fall protection program will be evaluated periodically to determine effectiveness. The following criteria will be used to evaluate its performance:

- Accident reports, number of accidents.
- Management/staff compliance with program components.
- Periodic on-site audits.
- Staff feedback, interviews.

Contractors

All outside contractors working in or on the premises will be required to follow the guidelines set forth in this fall protection program when the contractor and employees are exposed to fall hazards. Contractors in the prejob meeting will be informed of these requirements as well as the on-site construction rules that apply.

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. This program does not have to be in writing for employers with 10 or fewer employees. The standard should be referenced to ensure that all requirements are being met.)*

Fire Prevention Program
(Ref. 29 CFR 1910.39)

The primary goal of this fire protection program is to reduce or eliminate fires in the workplace by heightening the fire safety awareness of all employees. Another goal of this plan is to provide all employees with the information necessary to recognize hazardous conditions and take appropriate action before such conditions result in a fire emergency.

This plan details the basic steps necessary to minimize the potential for fire occurring in the workplace. Prevention of fires in the workplace is the responsibility of everyone employed by the company, but must be monitored by each supervisor overseeing any work activity that involves a major fire hazard. Every effort will be made by the company to identify those hazards that might cause fires and establish a means for controlling them.

The fire prevention plan will be administered by *(insert job title of responsible person)* who will compile a list of all major workplace fire hazards, the names or job titles of personnel responsible for fire control and prevention equipment maintenance, names or job titles of personnel responsible for control of fuel source hazards, and locations of all fire extinguishers in the workplace. The plan administrator or safety and health officer must also be familiar with the behavior of employees that may create fire hazards as well as periods of the day, month and year in which the workplace could be more vulnerable to fire.

This fire prevention plan will be reviewed annually and updated as needed to maintain compliance with applicable regulations and standards and remain state of the art in fire protection. Workplace inspection reports and fire incident reports will be maintained and used to provide corrections and improvements to the plan. This plan will be available for employee review at any time during all normal working hours.

Classification

Fires are classified into four groups according to sources of fuel: Class A, B, C and D based on the type of fuel source. Table 1 below describes the classifications of fire that can be used in making a hazard assessment.

Table 1

Class A	Ordinary combustible materials such as paper, wood, cloth, and some rubber and plastic materials.
Class B	Flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.
Class C	Energized electrical equipment and power supply circuits and related materials.
Class D	Combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.

Determining Fire Hazards

This section consists of two steps: first, identifying the existing fire hazards in the workplace and second, taking action to resolve them. The inspection checklist (located at end of program) provides a guide for precise fire-safe practices that must be followed. The location of these major fire hazards are denoted in the table found at the end of this program. Also found is a listing of the personnel responsible for the maintenance of the equipment and systems installed to prevent or control fires.

Material hazards will be identified, as evident on the specific material safety data sheets (MSDS), and labeled on containers as soon as they arrive in the workplace. The identification system will also be incorporated into the company's hazard communication program.

Storage and Handling Procedures

The storage of material will be arranged such that adequate clearance is maintained away from heating surfaces, air ducts, heaters, flue pipes and lighting fixtures. All storage containers or areas will prominently display signs to identify the material stored within. Storage of chemicals will be separated from other materials in storage, from handling operations and from incompatible materials. All individual containers will be identified as to their contents.

Only containers designed, constructed and tested in accordance with the U.S. Department of Transportation specifications and regulations are used for storage of compressed or liquefied gases. Compressed gas storage rooms will be areas reserved exclusively for that purpose with good ventilation and at least one hour fire resistance rating. The gas cylinders will be secured in place and stored away from any heat or ignition source. Pressurized gas cylinders will never be used without pressure regulators.

Ordinary Combustibles

- Wooden pallets will not be stacked over 6 feet tall. If feasible, extra pallets will be stored outside or in separate buildings to reduce the risk of fire hazards.
- Piles of combustible materials will be stored away from buildings and located apart from each other sufficiently to allow fire-fighting efforts to control an existing fire.

Flammable Materials

- Flammable and combustible liquids must be stored and used in accordance with 29 CFR 1910.106 or the most current NFPA 30.

Potential Ignition Sources

- Ensure that utility lights always have some type of wire guard over them.
- Don't misuse fuses. Never install a fuse rated higher than specified for the circuit.
- Investigate any appliance or equipment that smells strange. Space heaters, microwave ovens, hot plates, coffee makers and other small appliances will be rigidly regulated and closely monitored.
- The use of extension cords to connect heating devices to electric outlets will be prohibited.
- If a hot or under-inflated tire is discovered, it should be moved well away from the vehicle. As an alternative, the driver should remain with the vehicle until the tire is cool to the touch and then make repairs. If a vehicle is left with a hot tire, the tire might burst into flames and destroy the vehicle and load.

Welding and Cutting

Welding and cutting are not permitted unless authorized by management. If practical, welding and cutting operations will be conducted in well-ventilated rooms with a fire-resistant floor. If this practice is not feasible, contact *(insert job title of responsible person)* to ensure that the work areas have been surveyed for fire hazards, the necessary precautions taken to prevent fires, and issue a hot work permit. This hot work permit will only encompass the area, item and time that are specified on it.

If welding is to be performed over wooden or other combustible type floors, the floors will be swept clean, wetted down, and covered with either fire-retardant blankets, metal or other noncombustible coverings.

Welding will not be permitted in or near areas containing flammable or combustible materials (liquids, vapors or dusts). Welding will not be permitted in or near closed tanks that contain or have contained flammable liquids unless they have been thoroughly drained, purged, and tested free from flammable gases or vapors and the company's permit required confined spaces (PRCS) program is being followed. Welding will not begin until all combustible materials have been removed at least 35 feet from the affected areas, or if unable to relocate, covered with a fire-retardant covering. Openings in walls, floors or ducts will be covered if located within 35 feet of the intended work area. Welding will not be permitted on any closed containers.

Fire extinguishers will be provided at each welding or cutting operation. A trained watcher will be stationed at all times during the operation and for at least 30 minutes following the completion of the operation. This person will ensure that no stray sparks cause a fire and will immediately extinguish fires that do start.

Open Flames

No open flames will be permitted in or near spray booths or spray rooms. If indoor spray painting work needs to be performed outside of standard spray-painting booths, adequate ventilation will be provided. All potential ignition sources will also be eliminated.

Gasoline or alcohol torches will be placed so that the flames are at least 18 inches away from wood surfaces. They will not be used in the presence of dusts, vapors, flammable combustible liquids, paper or similar materials. Torches will never be left unattended while they are burning.

The company has a specific policy regarding cigarette/cigar/pipe smoking in the workplace. Smoking and no smoking areas will be clearly delineated with conspicuous signs. Rigid enforcement will be maintained at all times. The plan administrator will enforce observance of permissible and prohibited smoking areas for employees and outside visitors to the workplace. Fire safe metal containers will be provided where smoking is permitted. No smoking areas will be checked periodically for evidence of discarded smoking materials.

Static Electricity

The company recognizes that it is impossible to prevent the generation of static electricity in every situation, but the company realizes that the hazard of static sparks can be avoided by preventing the buildup of static charges. One or more of the following preventive methods will be used: grounding, bonding, maintaining a specific humidity level (usually 60–70 percent), and ionizing the atmosphere.

Where a static accumulating piece of equipment is unnecessarily located in a hazardous area, the equipment will be relocated to a safe location rather than attempt to prevent static accumulation.

Housekeeping and Fire Prevention Techniques

The following are housekeeping techniques and procedures to prevent occurrences of fire:

- Keep storage and working areas free of trash.
- Place oily rags in covered containers and dispose of daily.
- Do not use gasoline or other flammable solvent or finish to clean floors.
- Use noncombustible oil-absorptive materials for sweeping floors.
- Dispose of materials in noncombustible containers that are emptied daily.
- Remove accumulation of combustible dust.
- Don’t refuel gasoline powered equipment in a confined space, especially in the presence of equipment such as furnaces or water heaters.
- Don’t refuel gasoline powered equipment while it is hot.
- Don’t refuel plastic gasoline containers in the back of a truckbed.
- Follow proper storage and handling procedures.
- Ensure combustible materials in areas are present only in quantities required for the work operation.
- Clean up any spill of flammable liquids immediately.
- Ensure that if a worker’s clothing becomes contaminated with flammable liquids, the individual changes clothes before continuing to work.
- Post “No Smoking” caution signs near the storage areas.
- Report any hazardous condition such as old wiring, worn insulation and broken electrical equipment to the supervisor.
- Keep motors clean and in good working order.
- Don’t overload electrical outlets.
- Ensure all equipment is turned off at the end of the workday.
- Maintain the right type of fire extinguisher available for use.
- Use the safest cleaning solvents (nonflammable and nontoxic) when cleaning electrical equipment.

- Ensure that all passageways and fire doors are unobstructed. Stairwell doors must never be propped open, and materials must not be stored in stairwells.
- Periodically remove over-spray residue from walls, floors and ceilings of spray booths and ventilation ducts.
- Remove contaminated spray booth filters from the building as soon as replaced or keep immersed in water until disposed.
- Don't allow material to block automatic sprinkler systems or to be piled around fire extinguisher locations. To obtain the proper distribution of water, a minimum of 18 inches of clear space must be maintained below sprinkler deflectors. If there are no sprinklers, a 3-foot clearance between piled material and the ceiling must be maintained to permit use of hose streams. These distances must be doubled when stock is piled higher than 15 feet.
- Check daily for any discarded lumber, broken pallets or pieces of material stored on site and remove properly.
- Repile immediately any pile of material that falls into an aisle or clear space.
- Use weed killers that are not toxic and do not pose a fire hazard.

Fire Protection Equipment

Every building will be equipped with an electrically managed, manually operated fire alarm system. When activated, the system will sound alarms that can be heard above the ambient noise levels throughout the workplace. The fire alarm will also be automatically transmitted to the fire department. Any fire suppression or fire detection system will automatically actuate the building alarm system.

The automatic sprinkler system, if applicable, will adhere to NFPA 13, Standard for the Installation of Sprinkler Systems. The sprinkler system and components will be electrically supervised to ensure reliable operation. This includes gate valve tamper switches with a local alarm at a constantly attended site when the valve is closed. If a single water supply is provided by a connection to the city water supply, a low pressure monitor will be included. If pressure tanks are the primary source of water, air pressure, water level and temperature will be supervised. If fire pumps are provided to boost system pressure, supervision will monitor loss of pump power, pump running indication, low system pressure and low pump suction pressure.

If portable fire extinguishers are required or placed in a building, the fire extinguishers must be kept fully charged and in their designated places. The extinguishers must not be obstructed or obscured from view. The fire extinguishers must be inspected at least monthly to make sure that they are in their designated places, have not been tampered with or actuated, and are not corroded or otherwise impaired. The attached inspection tags on fire extinguishers will be initialed and dated each month.

The location of all hydrants, hose houses, portable fire extinguishers or other fire protective equipment will be properly marked with arrows and signs painted on the pavement. Painted arrows and signs will be repainted as necessary to ensure readability.

Training

All employees will be instructed on the locations and proper use of fire extinguishers in their work areas. Employees will also be instructed as to how to operate the building's fire alarm system, and be familiar with evacuation routes. The training of all employees will include the locations and types of materials and processes that pose potential fire hazards. Ongoing training will include regularly scheduled fire drills. The training program will also emphasize the following:

- Use and disposal of smoking materials.
- The importance of electrical safety.
- Proper use of electrical appliances and equipment.
- Unplugging heat-producing equipment and appliances at the end of each workday.
- Correct storage of combustible and flammable materials.
- Safe handling of compressed gases and flammable liquids (where appropriate).

Fire Prevention Checklist

This checklist should be reviewed regularly and kept up-to-date.

Electrical Equipment

___ No makeshift wiring
___ Extension cords serviceable
___ Motors and tools free of dirt and grease areas (if required)
___ Lights clear of combustible materials
___ Fuse and control boxes clean and closed
___ Circuits properly fused or otherwise protected
___ Equipment approved for use in hazardous
___ Safest cleaning solvents used

Friction

___ Machinery properly lubricated
___ Machinery properly adjusted and/or aligned

Special Fire-Hazard Materials

___ Storage of special flammable isolated
___ Nonmetal stock free of tramp metal

Welding and Cutting

___ Area surveyed for fire safety
___ Permit issued
___ Combustible removed or covered

Open Flames

___ Kept away from spray rooms and booths
___ No gas leak
___ Portable torches clear of flammable surfaces

Portable Heaters

___ Set up with ample horizontal and overhead clearances
___ Secured against tipping or upset
___ Combustibles removed or covered
___ Safely mounted on noncombustible surfaces
___ Use of steel drums prohibited
___ Not used as rubbish burners

Hot Surfaces

___ Hot pipes clear of combustible materials
___ Ample containers available and serviceable
___ Soldering irons kept off combustible surfaces
___ Ashes in metal containers

Smoking and Matches

___ No smoking" and "smoking" areas clearly marked areas
___ Discarded cigarette containers available and serviceable
___ No discarded smoking materials in prohibited
___ Ashes in metal containers

Spontaneous Ignition

___ Flammable waste material in closed metal containers
___ Flammable waste material containers emptied frequently
___ Piled material kept dry and well ventilated
___ Trash receptacle emptied daily

Static Electricity

___ Flammable liquid dispensing vessels grounded and bonded
___ Moving machinery grounded
___ Proper humidity maintained

Housekeeping

___ No accumulation of rubbish
___ Safe storage of flammables
___ Passageways clear of obstacles freely
___ Automatic sprinklers unobstructed
___ Premises free of unnecessary combustible materials
___ No leaks or dripping of flammables and floor free of spills
___ Fire doors unblocked and operating

Fire Protection

___ Proper type of fire extinguisher
___ Fire extinguisher in proper location
___ Access to fire extinguishers unobstructed
___ Access to fire extinguishers clearly marked
___ Fire protection equipment turned on
___ Extinguishing system in working order
___ Service date current
___ Personnel trained in use of equipment
___ Personnel exits unobstructed and maintained

Identified Fire Hazards and Responsible Personnel

Hazard Identification

Type	Building	Control	Extinguisher Location	Responsible Personnel

Fire Extinguisher Location

Type	Building	Extinguisher Location

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. This policy is not required to be in writing. The standard should be referenced to ensure that all requirements are being met.)*

First Aid, CPR and AED Response Policy
(Ref. 29 CFR 1910.151, 1910.269 and 1910.146)

The OSHA First Aid standard (29 CFR 1910.151) requires trained first aid providers at all workplaces of any size if there is no "infirmary, clinic, or hospital in near proximity to the workplace which is used for the treatment of all injured employees."

In addition to first aid requirements of 29 CFR 1910.151, several OSHA standards such as 1910.269 and 1910.146 require training in cardiopulmonary resuscitation (CPR) because sudden cardiac arrest from asphyxiation, electrocution, or exertion may occur. For these reasons, we have identified employees that are expected to render first aid as part of their job duties. They are also covered by the requirements of the Bloodborne Pathogens Standard (29 CFR 1910.1030). Our designated employees are trained by (*insert job title of person responsible*).

Employee Name	Department	Phone Number

*(**Note:** Training should be conducted in accordance with the American Red Cross or American Heart Association guidelines or other nationally recognized programs. Instructors should also be certified to train per the requirements of these programs.)*

***Note:** The following program is a **best practice**. Please modify or delete content to these policies as deemed necessary.*

Fleet Management and Vehicle Safety Program

Motor Vehicle Record Checks

All employees who drive a company vehicle will have their driving records checked. *(Insert how often checks will be conducted if necessary.)* Driving records will be obtained from the N.C. Department of Transportation, Division of Motor Vehicles, by one of the following methods:

- Use the Internet Driving Record Process online at:
  https://edmv-dr.dot.state.nc.us/DrivingRecords/DrivingRecords
- By mail. Follow the instructions found at:
  http://www.ncdot.gov/dmv/records/

Violations that result in the suspension of an employee's license with the state DMV may result in termination of employment if the employee must drive to perform the job.

Additionally, we have defined the number of violations an employee can have before losing the privilege of driving a company owned vehicle or piece of equipment for work. If an employee has more than the following on his or her record using the Moving Violation Point System below as a guide, the employee will lose work driving privileges. The loss of privileges to drive company owned vehicles may require the employee to use a personal vehicle to continue employment or may result in termination of employment depending upon how the loss of privilege affects the employee's ability to perform the job.

_____ Maximum number of serious violations allowed.

_____ Maximum number of minor violations allowed.

Moving Violation Point System

Serious Violations (seven points)

- Driving under the influence of alcohol or drug (N/A).
- Fleeing the scene of an accident or law enforcement (N/A).
- Driving under license suspension or revocation (N/A).
- Passing a stopped school bus (N/A).
- Speeding in a construction zone.
- 15 or more MPH above the speed limit.

Minor Violations (four points)

- From 10 MPH to 15 MPH above the speed limit.
- Passing on the yellow line or through an intersection.
- Running a red light.
- Failure to obey traffic signals.
- Tailgating.

Minor Violations (two points)

- Less than 10 MPH above the speed limit.
- Failure to yield right of way.
- Failure to provide proper signals.

Company Accident Reporting Procedures

- Call 911.
- Provide first aid to injured parties if qualified and do not move accident victims unless fire or other condition makes it safer to do so.
- Wait for law enforcement. Do not move vehicle until authorized by law enforcement unless the situation dictates otherwise.
- Report accident to supervisor as soon as possible.
- Provide accident documentation to supervisor upon return to office and file accident report.

Securing Materials for Transport

Secure tools or equipment while being transported to prevent unsafe movement of materials. During a crash or when making sudden maneuvers, loose objects can slide around or become airborne, injuring the driver and any passengers. Objects that could become a hazard should be secured or stored outside the passenger compartment. Objects on the back or outside of vehicles must be properly secured to prevent it from falling off. Never throw trash or other materials in the back of open truck or vehicle areas.

Seat Belt Use Policy

Seat belts are extremely effective in preventing injuries and loss of life. All employees must wear seat belts when operating a company owned vehicle or any vehicle on company premises or on company business and all occupants are to wear seat belts or, where appropriate, child restraints when riding in a company owned vehicle or in a personal vehicle being used for company business. All employees and their families are strongly encouraged to always use seat belts and the proper child restraints whenever they are driving or riding in any vehicle in any seating position.

Spotter Safety

A spotter should always be used any time a vehicle or moving equipment with a restricted view is operating on site. The spotter's main responsibilities are to look out for himself or herself and look out for all others on the site. Some tips for the spotter include:

- Never leave the driver's sight without notifying the operator to stop the vehicle.
- Always signal in an area the driver can see.
- Be consistent with hand signals to ensure understanding.

Safe Operation Techniques

- Do not drive a vehicle/equipment in reverse gear with an obstructed rear view unless it has an audible reverse alarm distinguishable from the surrounding noise level or another worker signals that it is safe. On sites with multiple vehicles with backup alarms, employees can become accustomed to these alarms and no longer hear them. Under these circumstances, the use of a spotter may be necessary.
- Workers must be highly visible in all levels of light. Warning clothing, such as red or orange vests, are required and, if worn for night work, must be of reflective material that meets the requirements of the most current version ANSI/ISEA 107.
- Never allow untrained workers to operate equipment.
- Drive vehicles or equipment only on roadways or grades that are safely constructed and maintained. Failure to do so can result in overturned equipment.
- Make sure that you and all other personnel are in the clear before using dumping or lifting devices.
- Lower or block bulldozer and scraper blades, end-loader buckets, dump bodies, etc., when not in use, and leave all controls in neutral position.
- Set parking brakes when vehicles and equipment are parked, and chock the wheels when on an incline.

Use of Personal Vehicles for Company Business

When employee-owned vehicles are used for business purposes for more than once-a-week local errands, the following procedures will be followed:

- The vehicle must be properly registered, tagged and inspected per NCDMV requirements.
- The employee must provide semi-annual proof of insurance. Generally, this will be done by providing an up-to-date insurance policy or card.

In cases where an employee's duties require them to drive their own vehicle routinely (defined as "more than once a week in a continuing fashion") on company business, the employee will be required to provide a copy of their insurance declaration page and at management's discretion (based on counsel with the insurance agent/carrier) the employee may be requested to have the following minimum limits *(Example limits)* on their personal auto policy:

- $300,000 combined single limit; or
- $100,000 per person/$300,000 per accident/$50,000 property damage.

Minimum limits of personal autos listed above are for business purposes only. They are not meant to address employee's entire insurance needs. Evaluation of such needs should be referred to the employee's insurance agent or company.

Work Zone Safety

- Use traffic signs, barricades or flaggers when construction takes place near public roadways.
- Ensure the traffic control zone is divided and maintained in five distinct areas: advance warning area, transition area, buffer area, worker area and termination area.
- Display properly spaced advance warning signs to notify drivers of lane tapering, shoulder work, paving or other activity.

Flaggers, signaling by flaggers and the garments worn must follow the OSHA rules that are incorporated by reference from the U.S. Department of Transportation's *Manual on Uniform Traffic Control Devices*, Part 6.

Company Vehicle Maintenance

Vehicles will be inspected by *(insert job title of responsible person)* every *(insert inspection frequency)*.

At a minimum, the following items will be checked:

- Ensure seat belts are in working order.
- Check vehicles before each shift to ensure that all parts and accessories are in safe operating condition. Examples include brake system, tire inflation and condition, emergency brakes, steering and all lights.
- Ensure audible alarms and horns are in working order. All bidirectional machines, such as front-end loaders, back hoes and bulldozers, must be equipped with a horn.

Cell Phones or Radios

The company will provide hands-free cell phones or other radio equipment to employees who have a business need for such equipment. "Hands-free" in this instance refers to not having to hold the phone while carrying on a discussion; however, placing calls and hanging up may require handling the phone.

For other employees, use of a cell phone while driving is prohibited when driving on company business. Drivers using a hands-free system should find a place to safely pull off of the road should they find themselves in complex or emotional conversations that can hinder safe driving or situations where they must refer to or take notes. No texting while driving is allowed.

For commercial vehicle operators, any applicable Federal Motor Carrier Safety Regulations (FMCSR) or state/local regulations regarding cell phone use should be followed where stricter than the above policy.

Commercial Motor Vehicle Operation (Commercial Driver's License—CDL)

For commercial motor vehicle operation, the following additional requirements under FMCSR 391 must be met. Some key elements of this section include:

- Drivers must be at least 21 years old.
- Drivers being able to read and speak the English language sufficiently to converse with the general public, to understand highway signs and signals in the English language, to respond to official inquiries, and to make entries on reports/records.
- Driver can, by reason of experience, training or both, safely operate the type of commercial motor vehicle you intend to have the driver operate.
- Driver is physically qualified to drive a commercial motor vehicle.
- Driver has a valid commercial motor vehicle operator's license.
- Driver has prepared and furnished you a list of moving violations covering the last 12 months.
- Driver is not disqualified to drive a commercial motor vehicle.
- Driver has successfully completed a driver's road test and has been issued a certificate of driver's road test from a previous or current employer.

For prospective commercial motor vehicle drivers, inquiries must be made of former employers over the last three years and, at a minimum, the last three years of the driver's driving records must be requested from the appropriate agency of every state where the driver was licensed to operate over the past three years.

Road Tests

Prior to operating a company vehicle, in addition to providing a valid driver's license and meeting the motor-vehicle record criteria, drivers must complete a road test provided by an authorized member of management. This is generally a 20-30 minute documented observation of your driving skills with the vehicle you are expected to be operating. Undue concerns may result in an advanced driver-training course (classroom or over the Internet) being required prior to driving a company vehicle.

Cargo Security

Cargo/equipment falling from vehicles can result in fatalities to pedestrians or other drivers.

Prior to each trip in a company pickup, truck or van, a final walk around of the vehicle by the driver should be completed to ensure that all cargo and equipment is adequately secured. In cases of questionable security, management or veteran drivers should be contacted for advice. Inspecting the cargo/equipment within the first 50 miles of the trip (as required for commercial motor vehicles per FMCSR 392.9) is recommended.

Drug and Alcohol Policy: Commercial Motor Vehicles Requiring a CDL

As applicable, FMSCR 382, "Controlled Substances and Alcohol Use and Testing," will be followed.

Vehicle Inspections

All passenger vehicles over 10,001 gross vehicle weight (GVW) are required to have a minimum of semi-annual inspections to ensure proper preventive maintenance (tire rotations, oil changes, etc.), drivability, care and recordkeeping.

All vehicles over 10,001 GVW, those that are designed for 15 or more passengers (including the driver), or those hauling hazardous materials to the extent that the vehicle needs to be placarded "Commercial Motor Vehicle" must have daily post-trip inspections performed and documented by the operator. This should also include documentation on maintenance concerns that would be seen by the next driver of the vehicle and any mechanical repairs that were completed between inspections.

Pretrip inspections, also known as walk-arounds, are required for commercial motor vehicles. This inspection also includes review of the last driver vehicle inspection report. No written documentation of this inspection is required unless there needs to be a sign-off on the prior driver vehicle inspection report.

Accident Review Committee

An accident review committee will be established and composed of three members chosen at large. One member will be a manager, one member will be a senior/experienced driver, and one member will be an employee chosen at large.

The purpose of this committee is to review the circumstances involving an accident to determine if the accident was preventable. The National Safety Council (NSC) guidelines will be used for this determination. A preventable accident is defined by NSC as: "Any occurrence involving a vehicle which results in property damage and/or personal injury, regardless of who was injured, what property was damaged, to what extent, or where it occurred; in which the driver in question failed to do everything he/she reasonably could have done to prevent the occurrence."

The definition of a preventable accident will be strictly and impartially applied. All accidents will be reviewed for evidence of defensive driving techniques.

Accident Review Findings

The findings of the accident review committee will be presented to the driver. If the committee finds the accident was preventable and the driver disagrees, the driver is encouraged to present "their side" and ask for a reopening of the finding. The committee may request assistance from insurance agency/carrier, loss control professionals in the event of a nonunanimous committee opinion or requested reopening. The committee, however, is under no obligation to reopen an accident review.

The findings of the committee will be placed in the driver's personal driving file for future review. If the accident was preventable, the driver may be subject to additional action as deemed appropriate by their supervisor or top-level management. These actions may include, but not be limited to, the following:

- Attendance at an advanced driver training seminar.
- Assignment (usually temporary) to a nondriving position.
- One and two above.
- Probation without pay from one to three weeks.
- Termination of employment (when driving record criteria is surpassed).

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. Please reference the standard for all requirements that may be applicable to your company.)*

Forklift Safety Program
(Ref. 29 CFR 1910.178)

Purpose

The purpose of this program is to prevent injury or property damage from the unsafe operation of powered industrial vehicles. The policy provides the fundamentals for the operation, use and maintenance of powered industrial trucks, including fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines. This program has been developed to comply with 29 CFR 1910.178, Powered Industrial Trucks.

General Requirements

Selection

- If the load to be handled is such that it presents a hazard to the operator (for instance, boxes falling from a pallet during travel), the manufacturer will install a vertical load backrest.
- A vehicle used in dim areas of the plant will come equipped with its own light (including vehicles that are used to load semi trucks).
- Nameplates and markings on powered industrial trucks should remain intact and should be maintained in legible condition. The manufacturer's written approval must be obtained for any modifications that affect truck capacity or safe operation. If a modification is made, the capacity, operation and maintenance instruction plates, tags or decals should be changed.
- Prior to using a truck in each area of the plant, the atmosphere or location should be classified as to whether it is hazardous or nonhazardous. The type of industrial truck used in each area is dependent on this classification. Only approved industrial trucks should be used in hazardous locations.

Safety Guards

The following safety guards should be provided on powered industrial trucks:

Enclosure Guards: All hazardous moving parts should be guarded, such as exposed gears and chain-and-sprocket drives. Tires should also be guarded to prevent objects from being propelled toward the operator.

Overhead Guard: An overhead guard should be provided where there is a danger of falling objects or where loads are lifted higher the operator's head. These guards should extend beyond the operator's position.

Vertical Load Backrest Extension: A load backrest extension should be provided when the type of load present a hazard to the operator.

Battery Maintenance

The following safety rules should be followed when charging/changing batteries:

- Batteries should be charged only in the battery charging area.
- Trucks should be properly positioned and the brake applied before attempting to change or charge batteries. Material handling equipment should be provided for handling batteries.

- Facilities should be provided for:
  - Flushing and neutralizing spilled electrolyte
  - Fire protection
  - Protecting charging apparatus from damage by trucks
  - Ventilation for dispersal of fumes from gassing batteries
- A carboy tilter or siphon should be provided for handling electrolyte.
- When changing batteries, acid should be poured into water; water should not be poured into acid.
- Ensure that vent caps are functioning. The battery or compartment covers should be open to dissipate heat.
- Take precautions to prevent open flames, sparks or electric arcs in the battery charging area.
- Smoking is prohibited in the charging area.
- Keep tools and metallic objects away from the top of uncovered batteries.
- Make sure that reinstalled batteries are properly positioned and secured in the truck.

Fuel Handling and Storage

Liquid fuels (gasoline, diesel fuel) should be handled and stored in accordance with National Fire Protection Association (NFPA) Flammable and Combustible Liquids Code (NFPA No. 30).

Liquefied petroleum gas (LPG) should be handled and stored in accordance with NFPA Storage and Handling of Liquefied Petroleum Gases (NFPA No. 58).

- The engine should be stopped and the driver should dismount the vehicle before a truck is refueled.
- Fuel tanks will not be filled while the engine is running. Spillage will be avoided. Refueling must be performed out of all buildings and away from open doors.
- Spillage of oil or fuel will be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.
- No forklift will be operated with a leak in the fuel system until the leak has been corrected.

Control of Noxious Gases and Fumes

Concentration levels of carbon monoxide gas created by powered industrial trucks should not exceed levels specified in 29 CFR 1910.1000. Currently, the 8-hour time weighted average limit is 50 parts per million (ppm). Industrial hygiene sampling should be conducted to verify carbon monoxide levels.

To control the levels of carbon monoxide in the plant, gasoline engines should not be idled in enclosed areas for long periods of time.

Routine Inspection and Maintenance

- Operators will be held responsible for checking the mechanical condition of their trucks at the start of each shift or before initial use.
- Operators will be instructed never to make adjustments or repairs on trucks, but to promptly report any faulty mechanical condition to maintenance for repair.
- Maintenance employees will make a thorough mechanical inspection of all trucks at least once a month, at which time necessary repair and parts replacement will be made.
- If at any time a powered industrial forklift is found to be in need of repair, defective or in any way unsafe, the truck will be taken out of service until it has been restored to safe operating condition.
- Open flames will not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

- Storage batteries used for electric-powered trucks require regular maintenance and charging. Adequate ventilation, emergency eyewash stations and other appropriate equipment will be provided. Employees will be trained in the proper procedures to handle and charge batteries and to handle acids.
- All powered industrial trucks should be maintained in safe operating condition at all times. Maintenance activities should include regular inspections, preventive maintenance and overhauls when necessary. Trucks that are not in safe operating condition should be removed from service until repairs are made. Repairs should be made only by authorized personnel.
- Powered industrial truck operators should inspect their trucks at the beginning of their shift. The operators should check the controls, tires, brakes, tires and other moving parts. A standardized operators' checklist should be used for these inspections. (A sample form is located at end of this section.)
- Documentation should be maintained of all inspection and maintenance activities. A file containing the maintenance and inspection records should be maintained for each truck.

Powered Industrial Vehicle Safe Operating Rules

Because of the hazards involved with powered industrial vehicle operations, the following safe operating practices have been developed to ensure that authorized employees drive in a safe manner.

General

- Safeguard the pedestrian at all times.
- When leaving a vehicle unattended (definition: vehicle not in view or is in view, but is more than 25 feet away), the operator should ensure the following:
  - Forks will be fully lowered.
  - The transmission is in neutral.
  - Power shut off.
  - Brakes set and key or connector plug is removed.
  - Wheels are chocked if the truck is parked on an incline.
- A safe distance will be maintained from the edge of ramps or platforms while on any elevated dock, platform or freight car. Vehicles will not be used for opening or closing doors.
- Brakes will be set and wheel chocks will be in place to prevent movement of trucks, trailers or railroad cars while loading or unloading. Fixed jacks may be necessary to support semi-trailer during loading or unloading when the trailer is not coupled to a tractor. The flooring of the trucks, trailers and railroad cars will be checked for breaks and weakness before they are entered with a vehicle.
- An overhead guard will be used as protection against falling objects.
- A load backrest extension should always be used to minimize the possibility of the load or part of it from falling forward.
- Fire aisles, fire doors, access to stairways, and fire equipment and emergency exits will always be kept clear.
- Any vehicle with hydraulically controlled attachments should only be used for which it was designed.
- Vehicles will not be driven up to anyone standing in front of a fixed object.
- The driver will never place his or her arms or legs between the uprights of the mast or outside the running lines of the vehicle.
- No person will be allowed to stand or pass under the elevated portion of any vehicle whether loaded or empty.
- Unauthorized personnel will not be permitted to ride on powered industrial vehicles.
- The driver will never push one load with another load.
- Spinner knobs must not be attached to steering hand wheels of trucks not originally equipped with such.

- Vehicles will never be used to lift people unless you have a properly designed safety platform securely attached to the forks and the mast.
- Dockboards or bridge plates will be properly secured before they are driven over. Dockboard or bridge plates will be driven over carefully and slowly and their rate capacity never exceeded.
- Elevators will be approached slowly and then entered squarely after the elevator car is properly leveled. Once on the elevator, the transmission will be in neutral, the engine shut off and the brakes set.
- Never pick up loads in excess of the rated capacity of the vehicle.

Traveling

- All traffic regulations will be observed, including observing all stop signs and yield signs.
- The driver must always slow down and sound the horn at cross aisles and when approaching blind corners, intersections or other locations where vision is obstructed.
- A safe distance under normal conditions will be maintained approximately three vehicle lengths from the truck ahead.
- The driver should always keep to the right of the aisle when possible.
- If the load being carried obstructs forward view, the driver must travel in reverse.
- Railroad tracks will be crossed diagonally whenever possible. Parking closer than 8 feet from the center of the railroad tracks is prohibited.
- Grades will be ascended or descended slowly, keeping the load uphill. Never operate diagonally across an incline.
- Operators should never reach through the mast of a vehicle to adjust the load.
- Keep forks slightly tilted back so load is cradled by the backrest to aid in stabilizing loads when traveling.
- When traveling the forks must be just high enough to clear the floor.

Operation of the Vehicle

- Vehicles will be inspected before being placed in service. Defects when found will be immediately reported and corrected.
- The daily operator's checkoff list must be filled out completely by each operator at the start of each shift before the vehicle is put into operation.
- If at any time during your shift a vehicle is found to be in need of repair or in anyway unsafe, the vehicle will be taken out of service until it has been restored to safe operating condition.
- Spillage of oil or fuel will be carefully washed away or completely evaporated and the fuel tank cup replaced before restarting engine.
- Fuel tanks will not be filled while the engine is running, spillage will be avoided.
- No vehicle will be operated with a leak in the fuel system or hydraulic system.
- Open flames will not be used for checking electrolyte level in storage batteries or gasoline level in field tanks.
- Before changing tanks on liquefied propane powered vehicles, the tank valve should always be turned off and the engine allowed to run until out of gas.
- Smoking is not allowed when changing storage batteries or placing them on charge or taking them off charge for electric powered vehicles.

Loading/Stacking

- Only stable or safely arranged loads will be handled.
- Only loads within the rated capacity of the vehicle will be handled.
- The forks must be placed under the load as far as possible. The mast will be carefully tilted backward.

- Extreme care should be used when tilting the load forward or backward, especially when the load is raised.
- When stacking or tiering, the operator should use only enough backward tilt to stabilize the load.
- The operator must be careful not to damage lights, pipes, sprinkler systems, overhead doors, vertical beams, walls, etc., when stacking material.
- The uppermost portion of any staked loads will never be closer than 18 inches under overhead installations, lights, etc.
- Never tilt the load except where the load is on a deposit position over a rack or stack.
- If material is not banded or correctly piled and the load obviously is wobbly, the operator will not attempt to lift it.
- Never stack material so that it causes blind spots at corners and intersections.
- Only stack material on a stable base that is sufficient in size and capable of supporting the stacked weight.
- The operator should remove unsafe containers and damaged pallets.

Training Requirements

Operator Training

Operator training will be conducted prior to allowing anyone to operate an industrial vehicle, with recertification for experienced drivers every three years. Methods will be devised to train operators in the safe operation of powered industrial lift trucks. This training should include the following:

- All employees covered by this program will receive proper training, including operation and rules for safe driving. A completed license will serve as documentation of the training. A copy of this license will be maintained on file with the company.
- All training for drivers will include classroom and practical driving testing.
- Operators certified to drive vehicles should be given a certification card to be carried with them whenever operating a vehicle.

Nonoperator Training

Employees working in areas where powered industrial vehicles operate should be made aware of the following general rules:

- Never pass under the raised forks of a vehicle, whether they are loaded or not.
- Walk around forks of a vehicle, never over or between them.
- Never “hitch a ride” on someone else’s vehicle.
- Allow vehicles the right of way.

Forklift Inspection Form		
General	**OK**	**Action Needed**
Do industrial trucks acquired after Feb. 15, 1972, meet the design requirements in American National Standard for Powered Industrial Trucks, Part II, ANSI B56.1-1969?	-----	----------
Has the manufacturer provided written approval for modifications that affect the capacity and safety operations of the equipment?	-----	----------
Do industrial trucks have labels designating approval for use in various hazardous and/or nonhazardous locations?	-----	----------
Designations		
Are safety coordinator and procurers of equipment aware of the 11 designations of industrial trucks or tractors (D, DS, DY, E, ES, EE, EX, G, GS, LP, and LS)?	-----	----------
Designated Use of Requirements		
Are safety coordinator and operators knowledgeable about the use of industrial trucks in various locations?	-----	----------
Fuel Handling and Storage Requirements		
Is the storage and handling of liquid fuels in accordance with NFPA Flammable and Combustible Liquids Code (NFPA No. 58-1969)?	-----	----------
Is the storage and handling of liquefied petroleum gas fuel in accordance with NFPA Storage and Handling of Liquefied Petroleum Gases (NFPA No. 58-1969)?	-----	----------
Changing and Charging Storage Batteries		
Are battery-charging installations located in areas designated for that purpose?	-----	----------
Are facilities provided for flushing and neutralizing spilled electrolyte?	-----	----------
Are facilities provided for adequate ventilation for dispersal of fumes from gassing batteries?	-----	----------
Is proper handling equipment (conveyor and hoists) provided for handling batteries?	-----	----------
Is a carbon filter or siphon provided for handling electrolyte?	-----	----------
Is care taken to ensure that vent caps are functioning when charging batteries? Note: The battery or compartment covers will be open to dissipate heat.	-----	----------
Is smoking prohibited in the charging area?	-----	----------
Are precautions taken to prevent open flames, sparks, or electric arcs in battery-charging areas?	-----	----------
Are tools and other metallic objects kept away from the tops of uncovered batteries?	-----	----------

Dockboards (bridge plates)		
Are portable and powered dockboards strong enough to carry the load imposed on them?	-----	----------
Are portable dockboards secured in position, either by being anchored or equipped with devices that will prevent slippage?	-----	----------
Are handholds or other effective means provided on portable dockboards to ensure safe handling?	-----	----------
Is positive protection provided to prevent railroad cars from being moved while dockboards or bridge plates are in position?	-----	----------
Operator Training		
Are only trained and authorized operators permitted to operate a powered industrial truck?	-----	----------
Truck Operations		
Is it prohibited for a person to stand or pass under the elevated portion of any truck, whether loaded or empty?	-----	----------
Are unauthorized personnel prohibited from riding on powered industrial trucks?	-----	----------
Is it prohibited for arms or legs to be placed between the uprights of the mast or outside the running lines of a truck?	-----	----------
Is it required for load-engaging means to be fully lowered, controls neutralized, power shut off and brakes set when a powered industrial truck is left unattended?	-----	----------
Is it required to maintain a safe distance from the edge of ramps or platforms while on any elevated dock, platform or freight car?	-----	----------
Is an overhead guard used as protection against falling objects?	-----	----------
Is a load backrest extension used whenever necessary to minimize the possibility of the load or part of it from falling backward?	-----	----------
Are only approved industrial trucks used in hazardous locations?	-----	----------

Traveling		
Is it required that all traffic regulations be observed, including authorized plant speed limits?	-----	----------
Is it required to yield the right of way to ambulances, fire trucks or other vehicles in emergency situations?	-----	----------
Is it required that drivers not pass other trucks traveling in the same direction at intersections, blind spots or other dangerous locations?	-----	----------
Is it required that drivers slow down and sound the horn at cross aisles and other locations where vision is obstructed?	-----	----------
Is it required that railroad tracks will be crossed diagonally wherever possible?	-----	----------
Is it required that when ascending or descending grades that exceed 10 percent loaded trucks be driven with the load upgrade?	-----	----------
Is it required that on all grades the load and load-engaging means be tilted back, if applicable, and raised only as far as necessary to clear the road surface?	-----	----------
Is it required that under all travel conditions the truck be operated at a speed that will permit it to stop in a safe manner?	-----	----------
Are stunt driving and horseplay prohibited?	-----	----------
Are dockboards or bridge plates properly secured before they are driven over?	-----	----------
Is it required that elevators be approached slowly and then entered squarely after the elevator car is properly leveled?	-----	----------
Is it required that motorized hand trucks enter elevators or other confined areas with load end forward?	-----	----------
Loading		
Are drivers instructed that only stable or safely arranged loads be handled?	-----	----------
Are drivers instructed that only loads within the rated capacity of the truck will be handled?	-----	----------
Is a load-engaging means placed under the load as far as possible?	-----	----------
Are drivers required to use extreme care when tilting the load forward or backward, particularly when high tiering?	-----	----------

Operation of the Truck		
Are personnel instructed that fuel tanks not be filled while the engine is running?	-----	----------
Is it required that spillage of oil or fuel be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting the engine?	-----	----------
Is it prohibited for a truck to be operated with a leak in the fuel system until the leak has been corrected?	-----	----------
Is it prohibited for open flames to be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks?	-----	----------
Maintenance of Industrial Trucks		
Is it required that no repairs be made in Class I, II and III locations?	-----	----------
Is it required that repairs to the fuel and ignition systems of industrial trucks, which involve fire hazards, be conducted only in locations designated for such repairs?	-----	----------
Is it required that trucks in need of repairs to the electrical system have the battery disconnected before such repairs are made?	-----	----------
Is it required that industrial trucks not be altered without the manufacturer's approval?	-----	----------
Is it required that industrial trucks be examined before being placed in service?	-----	----------
Is it required that water mufflers be filled daily or as frequently as necessary to prevent depletion of the water supply below 75 percent of the filled capacity?	-----	----------
Is it required that vehicles with mufflers and screens or other parts that may become clogged not be operated while such screens or parts are clogged?	-----	----------
Is it required that any vehicle that emits hazardous sparks or flames from the exhaust system be immediately removed from service and not returned to service until the cause for the emission of such sparks and flames has been eliminated?	-----	----------
Is it required that when the temperature of any part of any truck is found to exceed its normal operating temperature, thus creating a hazardous condition, the vehicle be removed from service and not be returned to service until the cause for such overheating has been eliminated?	-----	----------

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. Please reference the standard for all requirements that may be applicable to your company.)*

Hand and Powered Tools Program
(Ref. 29 CFR 1910.241–244)

Appropriate personal protective equipment, such as safety goggles and gloves, will be worn to protect against hazards that may be encountered while using hand tools.

Workplace floors will be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools.

Power tools will be fitted with guards and safety switches. They are extremely hazardous when used improperly. The types of power tools are determined by their power source: electric, pneumatic, liquid fuel, hydraulic or powder-actuated.

Guards

The exposed moving parts of power tools need to be safeguarded. Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating or moving parts of equipment must be guarded.

Machine guards, as appropriate, must be provided to protect the operator and others from the following:

- Point of operation
- In-running nip points
- Rotating parts
- Flying chips and sparks

Safety guards must never be removed when a tool is being used. Portable circular saws having a blade greater than 2 inches (5.08 cm) in diameter must be equipped with guards at all times. An upper guard must cover the entire blade of the saw. A retractable lower guard must cover the teeth of the saw, except where it makes contact with the work material. The lower guard must automatically return to the covering position when the tool is withdrawn from the work material.

General Safe Work Practices

To prevent hazards associated with the use of power tools, workers should observe general safe work practices:

- Never carry a tool by the cord or hose.
- Never yank the cord or the hose to disconnect it from the receptacle.
- Keep cords and hoses away from heat, oil and sharp edges.
- Disconnect tools when not using them, before servicing and cleaning them, and when changing accessories such as blades, bits and cutters.
- Keep all people not involved with the work at a safe distance from the work area.
- Secure work with clamps or a vise, freeing both hands to operate the tool.
- Avoid accidental starting. Do not hold fingers on the switch button while carrying a plugged-in tool.
- Maintain tools with care; keep them sharp and clean for best performance.
- Follow instructions in the user's manual for lubricating and changing accessories.
- Be sure to keep good footing and maintain good balance when operating power tools.
- Wear proper apparel for the task. Loose clothing, ties or jewelry can become caught in moving parts.
- Remove all damaged portable electric tools from use and tag them "Do Not Use."

Operating Controls and Switches—Safe Work Practices

The following hand-held power tools must be equipped with a constant-pressure switch or control that shuts off the power when pressure is released: drills; tappers; fastener drivers; horizontal, vertical and angle grinders with wheels more than 2 inches (5.08 cm) in diameter; disc sanders with discs greater than 2 inches (5.08 cm); belt sanders; reciprocating saws; saber saws, scroll saws, and jigsaws with blade shanks greater than ¼ inch (0.63 cm) wide; and other similar tools. These tools also may be equipped with a "lock-on" control, if it allows the worker to also shut off the control in a single motion using the same finger or fingers. The following hand-held power tools must be equipped with either a positive "on-off" control switch, a constant pressure switch, or a "lock-on" control: disc sanders with discs 2 inches (5.08 cm) or less in diameter; grinders with wheels 2 inches (5.08 cm) or less in diameter; platen sanders, routers, planers, laminate trimmers, nibblers, shears and scroll saws; jigsaws, saber and scroll saws with blade shanks a nominal ¼ inch (0.63 cm) or less in diameter. It is recommended that the constant-pressure control switch be regarded as the preferred device.

Other hand-held power tools such as circular saws having a blade diameter greater than 2 inches (5.08 cm), chain saws, and percussion tools with no means of holding accessories securely must be equipped with a constant pressure switch.

Electric Tools—Safe Work Practices

Employees using electric tools must be aware of several dangers. Among the most serious hazards are electrical burns and shocks.

Electrical shocks, which can lead to injuries such as heart failure and burns, are among the major hazards associated with electric powered tools. Under certain conditions, even a small amount of electric current can result in fibrillation of the heart and death. An electric shock also can cause the user to fall off a ladder or other elevated work surface and be injured due to the fall.

To protect the user from shock and burns, electric tools must have a three-wire cord with a ground and be plugged into a grounded receptacle, be double insulated, or be powered by a low voltage isolation transformer. Three-wire cords contain two current-carrying conductors and a grounding conductor. Any time an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to a known ground. The third prong must never be removed from the plug.

Double-insulated tools are available that provide protection against electrical shock without third-wire grounding. On double insulated tools, an internal layer of protective insulation completely isolates the external housing of the tool.

The following general practices should be followed when using electric tools:

- Operate electric tools within their design limitations.
- Use gloves and appropriate safety footwear when using electric tools.
- Store electric tools in a dry place when not in use.
- Do not use electric tools in damp or wet locations unless they are approved for that purpose.
- Keep work areas well lighted when operating electric tools.
- Ensure that cords from electric tools do not present a tripping hazard.

In the construction industry, employees who use electric tools must be protected by ground fault circuit interrupters (GFCI) or assured equipment grounding conductor program.

Portable Abrasive Wheel Tools—Safe Work Practices

Portable abrasive grinding, cutting, polishing and wire buffing wheels create special safety problems because they may throw off flying fragments. Abrasive wheel tools must be equipped with guards that (a) cover the spindle end, nut and flange projections; (b) maintain proper alignment with the wheel; and (c) do not exceed the strength of the fastenings.

Before an abrasive wheel is mounted, it must be inspected closely for damage and should be sound or ring tested to ensure that it is free from cracks or defects. To test, wheels should be tapped gently with a light nonmetallic instrument.

If the wheels sound cracked or dead, they must not be used because they could fly apart in operation. A stable and undamaged wheel, when tapped, will give a clear metallic tone or "ring."

To prevent an abrasive wheel from cracking, it must fit freely on the spindle. The spindle nut must be tightened enough to hold the wheel in place without distorting the flange. Always follow the manufacturer's recommendations. Take care to ensure that the spindle speed of the machine will not exceed the maximum operating speed marked on the wheel.

An abrasive wheel may disintegrate or explode during start-up. Allow the tool to come up to operating speed prior to grinding or cutting. The employee should never stand in the plane of rotation of the wheel as it accelerates to full operating speed. Portable grinding tools need to be equipped with safety guards to protect workers, not only from the moving wheel surface, but also from flying fragments in case of wheel breakage.

When using a powered grinder:

- Always use eye or face protection.
- Turn off the power when not in use.
- Never clamp a hand-held grinder in a vise.

Pneumatic Tools—Safe Work Practices

Pneumatic tools are powered by compressed air and include chippers, drills, hammers and sanders.

There are several dangers associated with the use of pneumatic tools. First and foremost is the danger of getting hit by one of the tool's attachments or by some kind of fastener the worker is using with the tool.

Pneumatic tools must be checked to see that the tools are fastened securely to the air hose to prevent them from becoming disconnected. A short wire or positive locking device attaching the air hose to the tool must also be used and will serve as an added safeguard.

If an air hose is more than ½ inch (1.27 cm) in diameter, a safety excess flow valve must be installed at the source of the air supply to reduce pressure in case of hose failure.

In general, the same precautions should be taken with an air hose that are recommended for electric cords, because the hose is subject to the same kind of damage or accidental striking, and because it also presents tripping hazards.

When using pneumatic tools, a safety clip or retainer must be installed to prevent attachments, such as chisels on a chipping hammer, from being ejected during tool operation.

Pneumatic tools that shoot nails, rivets, staples or similar fasteners and operate at pressures more than 100 pounds per square inch (689 kPa) must be equipped with a special device to keep fasteners from being ejected, unless the muzzle is pressed against the work surface.

Airless spray guns that atomize paints and fluids at pressures of 1,000 pounds or more per square inch (6,890 kPa) must be equipped with automatic or visible manual safety devices that will prevent pulling the trigger until the safety device is manually released.

Eye protection is required, and head and face protection is recommended for employees working with pneumatic tools.

Screens must also be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers or air drills.

Compressed air guns should never be pointed toward anyone. Never "dead-end" them against yourself or anyone else. A chip guard must be used when compressed air is used for cleaning.

Use of heavy jackhammers can cause fatigue and strains. Heavy rubber grips reduce these effects by providing a secure handhold. When operating a jackhammer, wear safety glasses and safety shoes that protect you against injury if the jackhammer slips or falls. A face shield should also be used.

Noise is another hazard associated with pneumatic tools. Working with noisy tools such as jackhammers requires proper effective use of appropriate hearing protection.

Liquid Fuel Tools

Fuel powered tools are usually operated with gasoline. The most serious hazard associated with the use of fuel-powered tools comes from fuel vapors that can burn or explode and also give off dangerous exhaust fumes. Be careful to handle, transport and store gas or fuel only in approved flammable liquid containers, according to proper procedures for flammable liquids.

Before refilling a fuel powered tool tank, shut down the engine and allow it to cool to prevent accidental ignition of hazardous vapors. When a fuel-powered tool is used inside a closed area, effective ventilation and/or proper respirators such as atmosphere-supplying respirators must be utilized to avoid breathing carbon monoxide. Fire extinguishers must also be available in the area.

Powder-Actuated Tools

Powder-actuated tools operate like a loaded gun and must be treated with extreme caution. In fact, they are so dangerous that they must be operated only by specially trained employees.

When using powder-actuated tools, wear suitable ear, eye and face protection. Select a powder level—high or low velocity—that is appropriate for the powder-actuated tool and necessary to do the work without excessive force.

The muzzle end of the tool must have a protective shield or guard centered perpendicular to and concentric with the barrel to confine any fragments or particles that are projected when the tool is fired. A tool containing a high velocity load must be designed not to fire unless it has this kind of safety device.

To prevent the tool from firing accidentally, two separate motions are required for firing. The first motion is to bring the tool into the firing position, and the second motion is to pull the trigger. The tool must not be able to operate until it is pressed against the work surface with a force of at least 5 pounds (2.2 kg) greater than the total weight of the tool.

If a powder-actuated tool misfires, hold the tool in the operating position for at least 30 seconds before trying to fire it again. If it still will not fire, the user must hold the tool in the operating position for another 30 seconds and then carefully remove the load in accordance with the manufacturer's instructions. This procedure will make the faulty cartridge less likely to explode. The bad cartridge should then be put in water immediately after removal. If the tool develops a defect during use, it should be *tagged* and *must be taken out of service immediately* until it is properly repaired.

Safety precautions that must be followed when using powder-actuated tools include the following:

- Do not use a tool in an explosive or flammable atmosphere.
- Inspect the tool before using it to determine that it is clean, that all moving parts operate freely, and that the barrel is free from obstructions and has the proper shield, guard, and attachments recommended by the manufacturer.
- Do not load the tool unless it is to be used immediately.
- Do not leave a loaded tool unattended, especially where it would be available to unauthorized people.
- Keep hands clear of the barrel end.
- Never point the tool at anyone.

When using powder-actuated tools to apply fasteners, several additional procedures must be followed:

- Do not fire fasteners into material that would allow the fasteners to pass through to the other side.
- Do not drive fasteners into very hard or brittle material that might chip or splatter or make the fasteners ricochet.
- Always use an alignment guide when shooting fasteners into existing holes.
- When using a high velocity tool, do not drive fasteners more than 3 inches (7.62 cm) from an unsupported edge or corner of material such as brick or concrete.
- When using a high velocity tool, do not place fasteners in steel any closer than ½ inch (1.27 cm) from an unsupported corner edge unless a special guard, fixture, or jig is used.

Hydraulic Power Tools

The fluid used in hydraulic power tools must be an approved fire-resistant fluid and must retain its operating characteristics at the most extreme temperatures to which it will be exposed. The exception to fire-resistant fluid involves all hydraulic fluids used for the insulated sections of derrick trucks, aerial lifts, and hydraulic tools that are used on or around energized lines. This hydraulic fluid will be of the insulating type.

The manufacturer's recommended safe operating pressure for hoses, valves, pipes, filters and their fittings must not be exceeded.

All jacks, including lever and ratchet jacks, screw jacks, and hydraulic jacks, must have a stop indicator and the stop limit must not be exceeded. Also, the manufacturer's load limit must be permanently marked in a prominent place on the jack and the load limit must not be exceeded.

A jack should never be used to support a lifted load. Once the load has been lifted, it must immediately be blocked up. Put a block under the base of the jack when the foundation is not firm, and place a block between the jack cap and load if the cap might slip.

To set up a jack, make certain of the following:

- The base of the jack rests on a firm, level surface.
- The jack is correctly centered.
- The jack head bears against a level surface.
- The lift force is applied evenly.

Proper maintenance of jacks is essential for safety. All jacks must be lubricated regularly. In addition, each jack must be inspected according to the following schedule: (a) for jacks used continuously or intermittently at one site—inspected at least once every six months, (b) for jacks sent out of the shop for special work—inspected when sent out and inspected when returned, and (c) for jacks subjected to abnormal loads or shock—inspected before use and immediately thereafter.

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. The standard should be referenced to ensure that all requirements are being met. The 2012 changes to the standard will be included in the next edition of this guide.)*

Hazard Communication Program
(Ref. 29 CFR 1910.1200)

This program will describe how to protect the safety and health of employees who are exposed to hazardous chemicals in the workplace, and to comply with the provisions of 29 CFR 1910.1200.

(*Insert job title of responsible person*) has been assigned the title of hazard communication program coordinator and is responsible for monitoring all related activities to ensure compliance with both the intent and specifics of this program.

Each supervisor will be held responsible for strict adherence to these policies and will closely monitor all activities involving hazardous chemicals.

Each employee will carefully follow established work practices and promptly report observed or potential problems to supervision.

No job is so vital or urgent as to justify the risk of employee overexposure to a hazardous chemical. Ask when in doubt. Proceed with a job only after being satisfied that it is safe to do so.

A list of all hazardous chemicals for each workplace has been made and is readily available upon request to any employee working on any shift. It is located at (*insert location of hazardous chemical list*).

A material safety data sheet (MSDS) for each hazardous chemical on the list referenced above is on file at (*insert location of MSDSs*).

The MSDSs are accessible during each work shift for any employee to review. If you have further questions about the MSDS procedure, contact your supervisor.

(*Insert job title of responsible person*) is responsible to ensure that the list of hazardous chemicals is kept current and that a current MSDS is on hand for each hazardous chemical used. A chemical that is not shown on the current list will not be ordered without prior coordination with (*insert job title of responsible person*).

All containers of hazardous chemicals in each workplace will be conspicuously labeled with the identity of the chemical (same as on the applicable MSDS) and the appropriate hazard warnings. If the chemical is a known or suspected cancer causing agent (carcinogen) or if it is known to affect a specific organ of the body, this information will also be placed on the container label. The person having supervisory responsibility for the storage or use of each hazardous chemical will ensure that such labels are not defaced and that they remain legible at all times.

(*Insert job title of responsible person*) will ensure that an adequate supply of labels is kept on hand and made available to the responsible supervisors.

(*Insert job title of responsible person*) is responsible for anticipating, as much as possible, the hazards that would be present for nonroutine tasks, such as a chemical spill or container rupture. Cleanup procedures and proper personal protective equipment will be considered and adequate training for such tasks will be addressed.

When an outside contractor will be used, it will be the responsibility of (*insert job title of responsible person*) to advise the contractor of any hazardous chemicals to which its employees may be exposed and the appropriate protective measures to be taken. Conversely, it will be the same person's responsibility to determine if the contractor will be using any hazardous chemicals during this work that would expose employees. Appropriate training and protective measures must be taken in order to protect employees. Prior to any work being performed by an outside contractor involving hazardous chemicals, (*insert job title of responsible person*) is to be advised.

All employees exposed to any hazardous chemicals will complete an information and training program that includes at least the subjects listed below. New employees must complete similar instruction before initial exposure to any hazardous chemical in the workplace.

Adequate training of all employees exposed to hazardous chemicals will be given by (*insert job title of responsible person*), assisted as needed by the hazard communication program coordinator.

Employee information for this program will include:

- The purpose and need for such a program, including the basic concept that gives every employee the right to know about hazardous chemicals with which they work.
- The location and availability of the written hazard communication program, plus the list of hazardous chemicals and their corresponding MSDSs.
- The identity, upon request, of any chemical to which the employee is exposed. In the case of a trade secret chemical, the name shown on the MSDS will be provided.

Employee training will include at least the following:

- Methods and observations used to detect the presence or release of a hazardous chemical in the work area, such as monitoring devices, appearance or odor.
- The physical and health hazards associated with each chemical, as specified in the MSDS.
- Action that employees can take to protect their own safety and health, including specific procedures that have been established for normal work practices, emergency procedures and policies on the use of personal protective equipment.
- Details of the hazard communication program, including an explanation of the labeling system used on in-house containers of hazardous chemicals. Also details of how employees can obtain and use information contained in the MSDS.

It is the intent of management to protect the safety and health of each employee. By following correct procedures, no employee should experience any harmful effects from working with chemicals in the workplace.

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. Please reference the standard for all requirements that may be applicable to your company.)*

Hazardous Materials Policy
(Ref. 29 CFR 1910, Subpart H, 1910.1200 and 1910.1000)

A hazardous material is a material that is capable of producing harmful physical or health effects. These include fire, sudden release of pressure, explosion, and other violent reactions. Harmful health effects include acute conditions and chronic conditions.

Acute conditions develop soon after overexposure to hazardous materials and include burns, rashes, respiratory distress, convulsions and possibly even death. Chronic conditions develop after long-term exposure to hazardous materials and include cancers, nervous system disorders and damage to other organ systems.

Safe Work Practices

Whenever it is feasible, engineering controls will be used to reduce employee exposures to hazardous materials. The two most common engineering controls are the use of local exhaust and general ventilation. These measures limit an employee's exposure to airborne contaminants.

When engineering controls are not available or they fail to adequately reduce hazards, other personal protective equipment is required. Examples of personal protective equipment include, but are not limited to, safety glasses, hearing protection, gloves and respirators.

Review the MSDS for PPE requirements, protective measures and emergency response as applicable.

Spill Procedure

- If the spilled material is flammable, turn off ignition and heat sources.
- Attend to any person who may have been contaminated.
- Notify individuals in the area about the spill.
- Evacuate nonessential personnel.
- Avoid breathing vapors of spilled material. Establish an exhaust or ventilation if it is safe to do so. Air handling units are not to be used because they recirculate the hazardous vapors. Contact your supervisor for information about the proper ventilation or exhaust required.
- If a spill is relatively large or involves a highly toxic material, a carcinogen or flammable material, contact your supervisor for assistance in cleaning up the spill and disposing of the hazardous waste resulting from the cleanup.

First Aid Procedures for Hazardous Materials

Eye Contact

If a chemical has been splashed into the eyes, immediately wash the eye and inner surface of the eyelid with copious amounts of water for 15 minutes. Check for and remove any contact lenses at once. Seek medical attention immediately.

Ingestion

Consult MSDS, a chemical first aid manual or call the Poison Control Information Center at 1-800-222-1222. Follow directions and seek medical attention immediately.

Minor Skin Contact

Promptly flush the affected area with water and remove any contaminated clothing. If symptoms persist after washing, seek medical attention.

Major Skin Contact

If chemicals have been spilled over a large area of the body, quickly remove all contaminated clothing while using the shower. Repeat if pain returns. Wash off chemicals by using a mild detergent or soap and water. Do not neutralize chemicals or apply salves. Seek medical attention immediately.

Remember that for some chemicals, such as hydrofluoric acid, effects resulting from exposure may not become apparent until hours or days later. Consult the MSDS for any chemical to which someone has been exposed, even if no immediate injury is apparent.

If Employee Is on Fire

If clothing is on fire, help the individual to the floor and roll him or her around to smother the flames. If a safety shower is immediately available, douse the person with water. Running to a remote shower will only fan the flame.

Fire blankets are primarily used as a first aid measure for prevention of shock rather than against smoldering or burning clothing. A fire blanket may direct flames toward the face.

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require your program to be in writing but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. The standard should be referenced to ensure that all requirements are being met.)*

Hearing Conservation Program
(Ref. 29 CFR 1910.95)

All employees who are exposed at or above 85 dBA as an 8-hour time-weighted average (TWA) will be included in a hearing conservation program. Monitoring will be repeated whenever a change in production, process, equipment or control increases noise exposure to the extent that:

- Additional employees may be exposed at or above the action level.
- The attenuation provided by the hearing protectors being used by the employees may be rendered inadequate. A complete sound survey will be conducted every (insert years).

For noise levels exceeding 90 dBA, mandatory hearing protection and engineering and administrative control measures will be utilized to reduce employee exposures.

Under the current OSHA standard, all workers exposed to 85 dBA as an 8-hour time-weighted average (TWA) are to be included in a hearing conservation program. It is important to note that for work shifts in excess of eight hours, the 85 dBA TWA is reduced. For example, exposures in excess of 83.4 dBA for a 10-hour work shift and exposures in excess of 82.1 dBA for a 12-hour work shift necessitate inclusion in a hearing conservation program.

Exposure Monitoring

An ongoing noise exposure evaluation program is required under the OSHA Standard for Occupational Noise Exposure (29 CFR 1910.95) when information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 dBA. Monitoring will be repeated whenever a change in production, process, equipment or control increases noise exposure to the extent that:

- Additional employees may be exposed at or above the action level.
- The attenuation provided by the hearing protectors being used by the employees may be rendered inadequate. A complete sound survey of the company is recommended at least every two years.

If it is determined through noise monitoring that employee are exposed at or above 85 dBA as an 8-hour time-weighted-average, then the employees must be provided with:

- Annual hearing tests.
- Annual hearing conservation training.
- Hearing protection (optional or mandatory).
- The OSHA Hearing Conservation Standard (29 CFR 1910.95) posted.
- Notification of the results of the sound survey.

If the noise level exceeds 90 dBA, the standard requires that engineering and administrative control measures must be investigated, evaluated and, where feasible, utilized to reduce employee exposures. It is important that any measure investigated, utilized or evaluated to reduce the noise levels be documented. Hearing protection is mandatory for employees exposed at or above 90 dBA as an 8-hour time-weighted average.

Engineering Controls to Reduce Noise

Contact the equipment manufacturer for noise abatement suggestions.

Purchase quieter equipment and perform routine maintenance to reduce noise levels.

Reduction of noise levels at the source:

- Substitution of materials (i.e., plastic for metal).
- Dampening or reducing surface vibration.
- Increasing the distance between the employee and the noise source.
- Enclosures or sound insulation material.
- Relocation of job tasks that may be completed out of high noise areas.

Administrative Controls to Reduce Noise

When engineering measures alone cannot reduce the noise below 90 dBA, administrative controls may be used to minimize employee exposure such as worker rotation from high noise levels to quiet areas or limiting the length of time an employee can work when rotation is not possible.

Hearing Conservation Training

Hearing conservation training is required annually for all employees with noise exposures of 85 dBA TWA or greater. The goal of the training is to teach the employees the company hearing conservation program policies and the requirements of the standard.

The following topics will be included in the employee training of the hearing conservation program:

The effects of noise on hearing:

- It can take many years to occur and the employee may not realize the gradual hearing loss. The loss occurs without any pain and cannot be corrected by any known medical or surgical treatment. A good rule of thumb to remember is that if you have to raise your voice at a distance of 3 feet, you are in an area with a possible hazardous noise level. Repeated unprotected noise exposure will cause a permanent hearing loss. The hearing conservation program has been established to ensure that if you ever have a standard threshold shift, your noise exposure can be lessened by using engineering or administrative controls or more effective hearing protection. Thus the problem can be controlled.

The purpose of the annual hearing test and an explanation of the test procedures:

- The purpose of the annual hearing test is to monitor your hearing. Periodic audiometric testing provides an "early warning" of hearing disability. Factors such as noisy hobbies, ear infections, diseases of the ear, as well as general illness may also cause hearing loss. All employees' hearing will be checked upon employment and once a year thereafter. You will be notified of any changes in your hearing. You cannot "fail" the test and you will not lose your job due to the results of the test.

The purpose of hearing protectors, instructions on selection, advantages, disadvantages, fitting use and care:

- The proper use of hearing protection will prevent many types of hearing loss. You must wear the required hearing protection properly and regularly to reap the benefits of the protection. You should have already been fitted by (insert name) for your size and type of earplug. If you have any problems with the fit of your hearing protectors, contact (insert name).

Hearing Tests

All employees who are exposed to a noise level of 85 dBA or above will be in the hearing conservation program and have their hearing checked annually. All hearing test results and other required documentation will be maintained in accordance with 29 CFR 1910.1020.

Employees will be scheduled as follows:

_____

_____

Testing will begin in (*time frame*) for all employees requiring the annual hearing test. Each employee's supervisor or designee will notify that employee of the test.

It is the responsibility of (*insert name*) to ensure that contractors providing hearing tests to employees meet OSHA requirements. It will be the responsibility of (*insert name*) to obtain and file the following documentation annually from the contractor providing the hearing tests: current audiometer calibration check records, last audiometer check, both background noise level records and current audiometer technician certification. If a mobile van used for testing cannot provide these records, then another testing center will be used.

(*Insert name*) will provide a file for the audiograms that is separate from other medical or personnel files. These files will be kept confidential.

Hearing Protection

The proper use of hearing protection will prevent many types of hearing loss. The employee must wear the required hearing protection properly and regularly to reap the benefits of the protection. If you have any problems with the fit of your hearing protectors, contact (*insert name*).

How to Properly Wear Hearing Protectors

It is an OSHA requirement that the company ensures the proper initial fitting and that the company provides training in the use and care of all hearing provided to employees.

Employee hearing protection training is required:

- Annually during hearing conservation training.
- Each time an employee shows a standard threshold shift change in hearing.

To prevent a hearing loss, hearing protectors must be worn correctly and taken care of. Keep your ear plugs clean by washing them in warm soapy water and make sure they are completely dry before inserting them in your ears. Inspect your hearing protection regularly. If they become damaged, hard or worn out, replace them with a new pair.

Due to the fact that everyone has different size ear canals, each person will be fitted by (*insert name*) to ensure they receive the right size. Each employee will be instructed on how to put their personal hearing protectors in and also be given the chance to practice in front of the hearing conservationist. Two different types of hearing protectors will be provided to employees. If there is a problem with the fit comfort of your hearing protectors, see (*insert name*) and you will be given a different type of protection.

Hearing Protection Life Span

The life of the hearing protector is dependent upon the care it is given. A sponge type hearing protector is disposable. But, as long as it is clean, it may be used until it no longer expands. How long the hearing protection lasts is unique to each employee depending on the chemical make-up of their body, as follows:

- Sponge plugs—one or two days.
- Custom plugs—18–24 months.
- Insert plugs—four–six months.
- Muffs—replace when worn out.

Putting In Earplugs

FIRST

Put your left arm over your head and with your left hand, pull up on your right ear.

SECOND

With your right hand insert the earplug. Switch hands and insert the other plug in the same manner.

Remember both plugs must work for complete protection.

Recordkeeping

Records are an important part of any effective hearing conservation program. The information contained in these records reflects the quality and effectiveness of the company hearing conservation program.

A number of documents are required to be maintained under the OSHA hearing conservation standard once the action level has been initiated. Some of these records must be retained for specified periods as shown in the following records and documentation. It is also required that these records be provided, upon request, to employees, former employees, representatives designated by the individual employee, and the assistant secretary of labor.

The following records/documentation is required by OSHA:

- Sound survey (retain at least two years).
- Employee notification on the results of the sound survey.
- Posted OSHA hearing conservation standard.

Hearing testing (retain for at least the duration of employment)

- Annual
- Baseline

Audiogram Evaluation Requirements

- Standard threshold shift requirements
- Physician review

Hearing Protection

Hearing Conservation Training

Audiometer

- Acoustic calibration check
- Exhaustive calibration check
- Biological calibration check
- Self-listening check

Booth (if testing is done on site)

- Background noise

Recording hearing loss on the OSHA 300 log.

Employee Notification of the Results of the Sound Survey

Employees must be notified of the results of the sound survey. Whether written or verbal notification is used, documentation must be maintained. It is recommended that the results of the survey be posted in a central location. Records will be kept for two years.

Posted OSHA Hearing Conservation Standard

It is an OSHA requirement that a copy of the OSHA standard be posted in a location accessible to all employees.

Hearing Testing

The two types of hearing tests are annual hearing tests and baseline hearing tests. The annual hearing testing is required for employees with 85 dBA TWA or higher noise exposures. Testing can be done any time during the day. Baseline hearing testing is done when an employee is initially hired. The baseline is extremely important because it is the reference against which future audiograms are compared to determine the extent to which an employee's hearing is deteriorating. The standard requires that a baseline must be done within six months of hire.

If a mobile van is used, the baseline is required within one year of an employee's first exposure at or above the action level. However, the employee must wear protection for any period exceeding six months until the baseline is obtained. (North Carolina Workers' Compensation Law has a 90 working day grace period. If a company gives the baseline before the grace period is up then the company may be liable only for subsequent hearing loss.) It is required that the baseline audiogram be preceded by at least 14 hours without exposure to workplace noise. Time that hearing protection is worn may be included as part of the 14 hours without exposure to noise.

All employees will be notified that they need to avoid nonoccupational noise exposure during the 14 hours prior the audiometric test. If it is not possible to avoid high noise levels prior to testing, the employee should wear hearing protection prior to the test to minimize the possibility of a temporary threshold.

A retest audiogram can be conducted to verify or confirm a standard threshold result. Times when a retest may be needed:

- The company may obtain a retest within 30 days of the original test and use the results to determine whether a persistent threshold shift has occurred.
- The audiologist or physician requests a retest to confirm test results.
- The test administrator requests a new test due to errors in the original test.

Audiometer

The company must verify that the following checks are made:

- The functional operation of the audiometer must be checked before each day's use by a person with stable hearing thresholds.
- Acoustic calibration check annually per the requirements of Appendix E of the standard.
- Exhaustive calibration checks at least every two years per ANSI S3.6.

Pulsed-tone and self-recording audiometers must meet the requirements of Appendix C of the standard.

Booth

The following must be done:

- Noise levels inside the booth must be checked with the ventilation fan on and off each time the booth location or environment changes.
- With no change in the environment or location, it is recommended that the background noise levels be checked every three years.

Recording Hearing Loss on the OSHA 300 Log

Hearing loss meeting the criteria in 29 CFR 1904.10 must be recorded on the *"Occupational Illness or Injury Form"* in the hearing loss column.

Standard Threshold Shift

A standard threshold shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 or more dBA at 2,000, 3,000 and 4,000 Hz. If a standard threshold shift has occurred, the employee must be informed in writing within 21 days of the determination. Employees must be trained in using hearing protectors and in care of the hearing protectors. If the employee is already using hearing protectors, they must be retrained and refitted. If necessary, hearing protectors can be changed to a different type.

Notification of "Quiet Period" Prior to Baseline Hearing Test (nonmandatory)

It is an OSHA hearing conservation standard requirement that employees be free from high noise exposure for 14 hours before each audiometric test. If it is not possible to avoid high noise levels prior to testing, the employee should wear hearing protection prior to the test to minimize the possibility of a temporary threshold.

The following types of noise exposures should be avoided prior to the test:

- Workplace noise
- Lawn mowers
- Leaf blowers
- Weed trimmers
- Chain saws
- Power tools
- Small engines
- Car races
- Snow mobiles
- Small airplanes
- Power boats
- All firearms (hunting, target shooting, skeet shooting)
- Loud music (concerts, walkman or other headset radio, radio/stereos)

I have been notified of the need to avoid occupational and nonoccupational noise prior to my test.

_____ _____

Employee Signature Date

Note: *This example program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. The standard should be referenced to ensure that all requirements are being met.*

Hexavalent Chromium Program (Ref. 29 CFR 1910.1026)

Exposure Limits

The 8-hour TWA permissible exposure limit (PEL) for hexavalent chromium is 5 μg/m^3 measured as Cr(VI). This means that over the course of any 8-hour work shift, the average exposure to Cr(VI) cannot exceed 5 μg/m^3.

The action level is set at 2.5 μg/m^3 of Cr(VI) calculated as an 8-hour TWA.

Exposure Monitoring and Determinations

We have assessed the workplace and work operations and have determined that there are exposures to Cr(VI).

To comply, we will perform the following exposure determination. *(Choose one option below and delete the other one)*:

- Scheduled monitoring option 1; or
- Performance-oriented option 2.

Scheduled Monitoring (Option 1)

Initial Monitoring

We have selected the scheduled monitoring option, which requires initial exposure monitoring to determine exposure to Cr(VI) for each worker. We have taken a sufficient number of personal breathing zone air samples to accurately characterize full shift exposure on each shift, for each job classification and in each work area.

Monitoring results will indicate the worker's time-weighted average exposure to airborne Cr(VI) over a typical 8-hour workday. In some cases, we will monitor all exposed workers, while in cases where workers perform the same job under the same conditions, we will only monitor "representative" personnel.

Periodic Monitoring

Periodic monitoring will be conducted quarterly when initial monitoring shows that the worker's exposure is at or above the action level.

Monitoring Frequency

If initial monitoring shows exposures above the PEL, but subsequent periodic measurements indicate that exposures have fallen to levels at or below the PEL, but still above the action level, we will reduce the frequency of periodic monitoring to every six months. We will discontinue periodic monitoring for workers represented by monitoring results indicating that exposures have fallen below the action level if those results are confirmed by a second measurement taken seven days later.

Additional Monitoring

Additional monitoring will be conducted when a workplace change results in new or additional exposures to Cr(VI) or we have reasons to believe that new or additional exposures have occurred. These changes include alterations in the production process, raw materials, equipment, personnel, work practices or control methods used in the workplace.

Performance-Oriented (Option 2)

We have determined the 8-hour TWA exposure for each worker on the basis of a combination of air monitoring data, historical monitoring data and objective data sufficient to accurately determine current worker exposure to Cr(VI). This option allows us flexibility in assessing the Cr(VI) exposures of our personnel more accurately.

The exposure determination will be performed prior to the time that the work operation commences and will provide the same degree of assurance that worker exposures have been correctly characterized as is provided for under the scheduled monitoring option.

We will reevaluate worker exposures when there is any change in the production process, raw materials, equipment, personnel, work practices or control methods that may result in new or additional exposures to Cr(VI). However, this option does not require any particular fixed schedule for performing reevaluations.

Objective Data

The objective data means information that demonstrates the expected worker exposure to Cr(VI) associated with a particular product or material or a specific process, operation or activity.

Information that can serve as objective data includes, but is not limited to, air monitoring data from an industry-wide survey; data collected by a trade association from its members; or calculations based on the composition or chemical and physical properties of a material. The data will reflect workplace conditions closely resembling the processes, types of material, control methods, work practices and environmental conditions in our current operations.

Regulated Areas

We will regulate areas wherever a worker's exposure to airborne concentrations of Cr(VI) is or is reasonably expected to be above the PEL. The regulated areas will be distinguishable from the rest of the workplace in a manner that adequately establishes and alerts workers to the boundaries of the regulated area.

This may be conducted by the use of warning signs, gates, ropes, barricades, lines, textured flooring or whatever other methods may be appropriate. Whatever methods are chosen will effectively warn workers not to enter the area unless they are authorized.

Authorized personnel are those employees required by their job duties to be present in the area and may include maintenance/repair personnel, managers and quality control engineers. Designated worker representatives may also enter the regulated area to observe exposure monitoring.

All people who enter the regulated area will use proper protective equipment, including respirators when appropriate.

Control Measures

To protect workers from Cr(VI) hazards whenever exposures exceed the PEL, we will use engineering and work practice controls to reduce and maintain Cr(VI) exposures to or below the PEL. These are the most effective controls.

Whenever feasible engineering and work practice controls are not sufficient to reduce exposures to or below the PEL, we will use such controls to reduce exposures to the lowest levels achievable and supplement them by the use of respiratory protection.

Engineering controls include substitution (using a less toxic material or process that results in lower exposures), isolation (such as enclosing the source of exposure), and ventilation (such as using a local exhaust system that captures airborne Cr(VI) near its source).

Work practice controls involve adjustments in the way a task is performed. Workers will be trained on the proper way to perform a task to minimize their exposure and to maximize the effectiveness of the control. In many cases, work practice controls complement engineering controls in providing worker protection.

We will not rotate workers to different jobs as a means of achieving compliance with the PEL.

Respiratory Protection

We will provide workers with respirators when feasible engineering and work practice controls are unable to reduce worker exposure to Cr(VI) to levels at or below the PEL.

Respirators are required during:

- Work operations such as maintenance and repair activities for which engineering and work practice controls are not feasible.
- Emergencies (i.e., any occurrence that results or is likely to result in an uncontrolled release of Cr(VI) that is not an incidental release that can be controlled by workers in the immediate area or by maintenance personnel).
- Where workers are exposed above the PEL for fewer than 30 days per year and the employer has opted not to implement engineering/work practice controls to achieve the PEL.
- Periods necessary to install or implement feasible engineering and work practice controls.
- Operations where all feasible engineering and work practice controls have been implemented but are not sufficient to reduce exposures to or below the PEL.

Where respirator use is required, employees will follow our respirator program.

Requirements for Protective Work Clothing and Equipment

We will provide and ensure the proper use of appropriate protective clothing and equipment whenever a hazard evaluation of the workplace has identified that skin or eye contact with Cr(VI) presents or is likely to present a hazard to workers. Where such a hazard is identified, we will select the clothing and equipment needed to protect workers from Cr(VI) hazards.

Some examples of protective clothing and equipment that may be necessary include, but are not limited to, gloves, aprons, coveralls, foot coverings and goggles. Normal street clothing and uniforms or other accessories that do not protect workers from Cr(VI) hazards are not considered protective clothing or equipment under the standard. Employers must provide and maintain the clothing and equipment at no cost to the worker.

The following precautions must be taken to protect workers and others who handle protective clothing and equipment:

We will ensure that workers remove protective clothing and equipment that has become contaminated with Cr(VI) either at the end of their work shift or when they complete their tasks involving Cr(VI) exposure, whichever comes first.

We will not allow any worker to remove contaminated protective clothing or equipment from the workplace, except for those workers whose job it is to launder, clean, maintain or dispose of the clothing or equipment.

When contaminated protective clothing or equipment is removed for laundering, cleaning, maintenance or disposal, we will ensure that it is stored and transported in sealed impermeable bags or other closed impermeable containers.

Bags or containers of contaminated protective clothing or equipment that are removed from change rooms for laundering, cleaning, maintenance or disposal will be labeled in accordance with the Hazard Communication Standard.

We will clean, launder, repair and replace protective clothing and equipment as necessary to ensure that the effectiveness of the clothing and equipment is maintained.

We will inform any person who launders or cleans protective clothing or equipment contaminated with Cr(VI) of the potentially harmful effects of Cr(VI) exposure, and that the clothing and equipment should be laundered or cleaned in a manner that minimizes skin or eye contact with Cr(VI) and prevents exposure to Cr(VI) in excess of the PEL. Removal of Cr(VI) from protective clothing and equipment by blowing, shaking, or any other means that disperses Cr(VI) into the air or onto a worker's body is prohibited.

Hygiene Areas and Practices

Change rooms are required when workers change out of their street clothes to use protective clothing and equipment. The change rooms must prevent Cr(VI) contamination of street clothes, and will be equipped with separate storage facilities for protective clothing and equipment and for street clothes. This will limit exposures after the work shift ends and avoid the contamination of workers' cars and homes.

Washing facilities will be provided and readily accessible and capable of removing Cr(VI) from the skin. We will ensure that affected workers use these facilities when necessary. This includes making sure that workers who have skin contact with Cr(VI) wash their hands and faces at the end of the work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet.

Eating and drinking areas and surfaces will be maintained as free as practicable of Cr(VI) whenever employers allow workers to consume food or beverages at a worksite where Cr(VI) is present. We will ensure that workers do not enter eating and drinking areas wearing protective clothing or equipment, unless the protective clothing or equipment is properly cleaned beforehand. **No one should blow dust off protective clothing and equipment.**

We will ensure that workers do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics—or carry or store products associated with these activities—in regulated areas or in areas where skin or eye contact with Cr(VI) occurs.

Housekeeping

Proper housekeeping requirements are important because they target sources of exposure to Cr(VI) that engineering controls are generally not designed to address (such as skin exposures).

We will ensure that all surfaces are maintained as free as practicable of accumulations of Cr(VI). Spills and releases of Cr(VI)-containing material will be cleaned up promptly.

Cleaning Methods

Surfaces contaminated with Cr(VI) will be cleaned by HEPA filtered vacuuming or other methods that minimize exposure to Cr(VI), including wet methods such as wet sweeping or wet scrubbing. Dry methods (e.g., dry shoveling, dry sweeping and dry brushing) are only allowed in cases where HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure to Cr(VI) have been tried and found not to be effective.

The use of compressed air for cleaning surfaces is only allowed when used in conjunction with a ventilation system designed to capture the dust cloud or when no alternative method is feasible.

Employees should use caution whenever compressed air is used as a cleaning method, since the air will spread the contamination further unless the dust is appropriately collected. Compressed air should never be directed at other workers and should not be used to clean protective clothing or equipment.

We will ensure that waste, scrap, debris and any other materials contaminated with Cr(VI) are collected and disposed of in sealed impermeable bags or other closed impermeable containers.

Additionally, bags or containers of waste, scrap, debris and any other materials contaminated with Cr(VI) must be labeled.

Medical Surveillance

The purpose of medical surveillance is to determine if an individual can be exposed to Cr(VI) at his or her workplace without experiencing adverse health effects; to identify Cr(VI)-related adverse health effects when they do occur so that appropriate intervention measures can be taken; and to determine a worker's fitness to use personal protective equipment such as respirators. All medical examinations and procedures will be performed by or under the supervision of a physician or other licensed healthcare professional (PLHCP).

When medical surveillance is required, it will be provided at no cost to workers and at a reasonable time and place. If participation requires travel away from the worksite, the employer must bear the cost. Workers will be paid for time spent taking medical examinations, including travel time.

Employers must provide medical surveillance to workers who are:

- Exposed or may be exposed to Cr(VI) at concentrations at or above the action level (as an 8-hour TWA) for 30 or more days per year.
- Experiencing signs and symptoms of adverse health effects associated with Cr(VI) exposures (e.g., blistering lesions, redness or itchiness of exposed skin, shortness of breath or wheezing that worsens at work, nosebleeds, a whistling sound while inhaling or exhaling).
- Exposed in an emergency situation (i.e., any occurrence that results or is likely to result in an uncontrolled release of Cr(VI) that is not an incidental release that can be controlled by workers in the immediate area or by maintenance personnel).

Frequency of Medical Examination

Medical examinations must be given:

- Within 30 days after initial assignment to a job involving Cr(VI) exposure, unless the worker has received an examination that meets the requirements of the standard within the last 12 months.
- Annually.
- Within 30 days after a PLHCP's written medical opinion recommends an additional examination.
- Whenever a worker shows signs or symptoms of the adverse health effects associated with Cr(VI) exposure.
- Within 30 days after exposure during an emergency which results in an uncontrolled release of Cr(VI).
- At the termination of employment, unless the last examination provided was less than six months prior to the date of termination.

Contents of the Medical Examinations

- A medical and work history that focuses on the worker's past, present and anticipated future exposure to Cr(VI); any history of respiratory system dysfunction; any history of asthma, dermatitis, skin ulceration or nasal septum perforation; and smoking status and history.
- A physical examination of the skin and respiratory tract.
- Any additional tests that the examining PLHCP considers appropriate for that worker.

Note: The standards do not specify tests or procedures that must be provided to all workers. Rather, the information obtained from the medical and work history along with the physical examination of the skin and respiratory tract (the main targets of Cr(VI) toxicity) allow the PLHCPs to use their medical judgment to determine what tests, if any, are warranted.

Information Provided to the PLHCP

We will ensure that the PLHCP has a copy of the Cr(VI) standard and will provide the PLHCP with:

- A description of the affected worker's former, current and anticipated duties as they relate to Cr(VI) exposure.
- Information on the worker's former, current and anticipated Cr(VI) exposure levels.
- A description of any personal protective equipment used or to be used by the worker, including when and for how long the worker has used that equipment.
- Information from records of employment-related medical examinations previously provided to the affected worker currently within the control of the employer.

Written Medical Opinion

We will obtain a written medical opinion from the PLHCP for each medical examination performed. The written medical opinion must be obtained within 30 days of the examination, and must contain:

- The PLHCP's opinion as to whether the worker has any detected medical condition(s) that would place the worker at increased risk of material impairment to health from further exposure to Cr(VI).

- Any recommended limitations on the worker's exposure to Cr(VI) or on the use of personal protective equipment such as respirators.
- A statement that the PLHCP has explained to the worker the results of the medical examination, including any medical conditions related to Cr(VI) exposure that require further evaluation or treatment, and any special provisions for the use of protective clothing or equipment.

The PLHCP will not reveal to the employer any specific findings or diagnoses that are not related to workplace Cr(VI) exposure. We will provide a copy of the written medical opinion to the examined worker within two weeks after receiving it.

Worker Training and Communication

It is critically important that workers recognize the hazards associated with exposure to Cr(VI) and understand the measures they can take to protect themselves.

Employees will receive hazard communication training along with:

- The requirements of the Cr(VI) standard.
- The medical surveillance program required by the standard, including recognition of the signs and symptoms of adverse health effects that may result from Cr(VI) exposure.

We will also have a copy of the Cr(VI) standard available without cost to affected workers.

Recordkeeping

Accurate records can demonstrate employer compliance with the standard and can assist in diagnosing and identifying workplace related illnesses. Therefore, we will maintain records of worker Cr(VI) exposures (including air monitoring data, historical monitoring data and objective data) and medical surveillance records.

Air Monitoring Data

We will keep an accurate record of all air monitoring performed to comply with the standard. The record will indicate:

- The date of the measurement for each sample taken.
- The operation involving exposure to Cr(VI) that was monitored.
- Sampling and analytical methods used and evidence of their accuracy.
- The number, duration and results of samples taken.
- The type of personal protective equipment used (e.g., type of respirators worn).
- The name, Social Security number and job classification of all workers represented by the monitoring, specifying which workers were actually monitored.

Historical Monitoring Data

If any historical monitoring data was used to determine worker exposures to Cr(VI), an accurate record of the historical monitoring data will be maintained. The record will show:

- That the data were collected using methods that meet the accuracy requirements of the standard.
- That the processes and work practices, characteristics of the Cr(VI)-containing material, and environmental conditions at the time the data were obtained are essentially the same as those of the job for which current exposure is being determined.
- Any other relevant data regarding operations, materials, processes or worker exposures.

Objective Data

If any objective data were used to comply with the Cr(VI) standard, an accurate record of the objective data will be maintained. The record will indicate:

- The Cr(VI)-containing material in question.
- The source of the objective data.
- The testing protocol and results of testing, or analysis of the material for the release of Cr(VI).
- A description of the process, operation or activity and how the data support the determination.
- Any other relevant data regarding the processes, operations, activities, materials or worker exposures.

Medical Surveillance

We will maintain an accurate record for each worker provided medical surveillance under the standard. The record will include the following information about the worker:

- Name and Social Security number.
- A copy of the PLHCP's written opinions.
- A copy of the information that the employer was required to provide to the PLHCP (i.e., a description of the worker's duties as they relate to occupational Cr(VI) exposure; the worker's Cr(VI) exposure levels; a description of the personal protective equipment used by the worker; and information from previous employment-related medical examinations).

Exposure and medical records will be maintained and made available to workers and their representatives in accordance with 29 CFR 1910.1020, Access to Employee Exposure and Medical Records. In general, exposure records will be kept for at least 30 years, and medical records will be kept for the duration of employment plus 30 years. It is necessary to keep these records for extended periods because cancer often cannot be detected until 20 or more years after exposure, and exposure and medical records can assist in diagnosing and identifying the cause of disease.

Note: *The following example program is a* ***best practice*** *and does not need to be in writing. Please modify or delete content to these policies as deemed necessary. 1910.146 - Hot work permit definition: The employer's written authorization to perform operations (for example; riveting, welding, cutting, burning and heating) capable of providing a source of ignition.)*

Hot Work Permit Program

Hot work operations include tasks such as welding, brazing, torch cutting, grinding and torch soldering. These operations create heat, sparks and hot slag that have the potential to ignite flammable and combustible materials in the area surrounding hot work activities.

(*Insert job title of responsible person*) is responsible for issuing hot work permits and will inspect hot worksites prior to the start of such operations.

When required, an employee will be designated to serve as a fire watch. The fire watch will monitor the safety of hot work operations and watch for fires. Fire watches are posted during hot work and for at least 30 minutes after work has been completed.

Prior to beginning work, a hot work permit will be filled out and will be posted in the area where hot work is to be performed.

Hot Work Permit

Date _____ Time_____ ☐ a.m. ☐ p.m.
Name of Person(s) Performing Work _____
Specific Location of Work _____

	Yes	No
Cutting or welding permitted in an area that has been made fire safe.	____	____
All movable fire hazards in the vicinity have been taken to a safe place.	____	____
Guards used to contain the heat, sparks and slag if fire hazards cannot be removed.	____	____
Floor or wall openings or cracks, open doorways and windows protected or closed.	____	____
Fire extinguisher available for use.	____	____
Fire watch in areas where other than a minor fire might develop, such as around combustible material.	____	____
Floors swept clean of combustible material for a radius of 35 feet.	____	____
Combustible floors have been kept wet, covered with damp sand or protected by fire-resistant shields.	____	____
Welding/cutting done only in areas authorized by management. No welding/cutting in sprinkled building when sprinkler system is impaired or in presence of explosive atmosphere or in area of storage of readily ignitable material.	____	____
Dusts and conveyor systems that might carry sparks to distant combustibles protected or shutdown.	____	____
Cutter/welder is trained in safe operation of equipment and safe use of the process.	____	____
Any on-site contractors advised about flammable material or hazardous conditions of which they may not be aware.	____	____

Welding or Cutting Containers:

	Yes	No
Container thoroughly cleaned and ventilated.	____	____
Any pipelines or connections to containers disconnected or blanked.	____	____
PPE used as needed, e.g., eye protection, helmet, protective clothing, respirator and gloves.	____	____
Warning sign posted to warn other workers of hot metal.	____	____
Appropriate ventilation provided.	____	____
When working in confined spaces, a permit has been issued as per 1910.146.	____	____

For specific requirements, refer to General Industry Standards 1910.146, 1910.252–254 and 1910.272 and Construction Standards 1926.803, 1926.350 and 1926.352–353.

_____ _____
Authorized Signature—Supervisor Date

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. Please reference the standard for all requirements that may be applicable to your company.)*

Housekeeping Program
(Ref. 29 CFR 1910.22)

Housekeeping is an important element of every safety and health program. When materials, tools and equipment all have a place for orderly storage and are returned to the proper place after use, they are easier to find and easier to inspect for damage and wear.

The following housekeeping safety procedures apply:

- Keep work areas and storage facilities clean, neat and orderly.
- Keep all aisles, stairways, passageways, exits and access ways to buildings free from obstructions at all times. Remove all grease and water spills from traffic areas immediately.
- It is everyone's responsibility to pick up and clean up.
- Do not place supplies on top of lockers, hampers, boxes or other moveable containers at a height where they are not visible from the floor.
- When piling materials for storage, make sure the base is firm and level. Cross tie each layer. Keep piles level and do not stack piles too high. Keep aisles clear and maintain adequate space to work in them.
- When storing materials suspended from racks or hooks, secure them from falling and route walkways a safe distance from the surface beneath.
- When storing materials overhead on balconies or mezzanines, provide adequate toeboards to keep objects from rolling over the edge.
- Do not let materials and supplies that are no longer needed accumulate. If it is not needed, get rid of it!
- Tools, equipment, machinery and work areas are to be maintained in a clean and safe manner. Defects and unsafe conditions must be reported to your supervisor.
- Return tools and equipment to their proper place when not in use.
- Lay out extension cords, air hoses, water hoses, ladders, pipes, tools, etc., in such a way as to minimize tripping hazards or obstructions to traffic.
- Clean up spills immediately to avoid hazards. In the event the removal cannot be done immediately, the area must be appropriately guarded, signed or roped off.
- Nail points, ends of loop or tie wires, etc., must not be left exposed when packing and unpacking boxes, crates, barrels, etc. Nails are to be removed as soon as lumber is disassembled.
- Store sharp or pointed articles to keep co-workers from coming in contact with the sharp edges or points.
- Dispose of all packing materials properly to reduce the chance of fires.
- Empty wastebaskets daily into approved containers.
- Put oily and greasy rags in a metal container for that purpose and dispose of properly and frequently.
- Maintain adequate lighting in obscure areas for the protection of both employees and the public. Keep landscaping well manicured to minimize hiding places.
- Employees are not to handle food, tobacco, etc., with residue from any lead-based product (such as leaded gasoline) on their hands. Consumption of food and beverages is prohibited in areas where hazardous substances are stored or used.
- Employees whose hands are cut or scratched are not to handle any lead-based products.

- All switches or drives on machinery must be shut down and locked out before cleaning, greasing, oiling, or making adjustments or repairs.
- Circuit breaker boxes and fuse boxes should be kept closed at all times. It is a requirement to maintain a minimum clearance of 36 inches in front of them.
- Flammables (kerosene, gasoline) and combustible materials (coats, rags, cleaning supplies) should not be stored in mechanical rooms or around electrical boxes.
- Extension cords should not be run across aisles or through oil or water. Inspect cords for kinks, worn insulation and exposed strands of wire before use.
- When fuses blow continually, it is an indication of an overload or short. Report this condition to your safety coordinator immediately.
- Keep electrical equipment properly maintained and free of grease and dirt.
- To prevent static sparks, keep drive belts dressed. Also check belts for proper tension to prevent overloading motors.
- Maintain fire inspections and other fire prevention measures.

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. Please reference the standard for all requirements that may be applicable to your company.)*

Hygiene and Decontamination Procedures (Ref. 29 CFR 1910.1030 and 1910.120)

Safe Work Practices

General Hygiene Practices

- Regularly wash hands, face, neck and other exposed skin surfaces with soap and water after using the toilet; prior to preparing food and eating or drinking, applying cosmetics, using medications, or smoking; after chemical use and dirty work; and at the end of the workday.
- Use shower facilities after exposure to chemicals or as needed.
- Dispose of clothes in proper laundry containers.
- Floodwaters may be contaminated with sewage and decaying animal and human remains. Wear appropriate PPE when contact cannot be avoided.
- Disinfection of skin, clothing, tools and equipment, and work surfaces after contamination is critical in disease prevention.
- Seek immediate medical attention if a wound becomes red, swells or oozes pus.

Hand Decontamination

- Use soap and clean water whenever it is available. A waterless alcohol-based hand cleaner may be used when soap and water are not immediately available; however, employees must wash their hands with soap and water as soon as possible.
- Rinse completely; dry with a clean disposable towel or air dry.

Clothing, Tool and Equipment Decontamination

- Use soap and clean water when available.
- If only contaminated water is available, mix ¼ cup bleach per gallon of water. Immerse objects in solution for 10 minutes; for clothing, gently agitate periodically.
- Transfer objects to hand wash solution for 10 minutes; for clothing, gently agitate periodically.
- Allow clothes and tools/equipment to thoroughly air dry before reuse.

Clothing, tools and equipment that cannot be decontaminated in the field or on which bleach, chemicals or water cannot be used (such as electrical or battery operated equipment) must be containerized/bagged on site and labeled as contaminated. The manufacturer of the clothing, tools or equipment may need to be contacted to discuss appropriate cleaning procedures.

Severe Surface Decontamination

- For decontaminating the most seriously affected surfaces.
  - Mix 1½ cups of bleach per gallon of water.
  - Douse surfaces with heavy contamination and allow to sit for three minutes.
  - Wipe the contamination from the surface with a paper towel and douse the surface again, but use the hand wash solution.
  - Wipe off residual contamination with a paper towel.

Clothing, tools and equipment that have internal cavities or components that cannot be completely decontaminated in the field or on which bleach, chemicals or water cannot be used (such as electrical or battery operated equipment) must be containerized/bagged on site and labeled as contaminated. The manufacturer of the clothing, tools or equipment may need to be contacted to discuss appropriate cleaning procedures.

Important Considerations

- Use gloves and eye protection.
- Prepare bleach solutions daily and allow to stand for at least 30 minutes before use.
- Label containers “Bleach-disinfected water, DO NOT DRINK.”
- CAUTION: Do not mix bleach with ammonia products.

*(**Note:** The following program is an example of a written program and based on standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. Please reference the standard for all requirements that may be applicable to your company.)*

Industrial Hygiene Policy
(Ref. 29 CFR 1910.1000)

Industrial hygiene is the science of anticipating, recognizing, evaluating and controlling workplace conditions that may cause workers injury or illness. Industrial hygienists use environmental monitoring and analytical methods to detect the extent of worker exposure and employ engineering, work practice controls and other methods to control potential health hazards.

Air Contaminants

These are commonly classified as either particulate or gas and vapor contaminants. The most common particulate contaminants include dusts, fumes, mists, aerosols and fibers. Dusts are solid particles that are formed or generated from solid organic or inorganic materials by reducing their size through mechanical processes such as crushing, grinding, drilling, abrading or blasting.

Fumes are formed when material from a volatilized solid condenses in cool air. In most cases, the solid particles resulting from the condensation react with air to form an oxide.

The term mist is applied to a finely divided liquid suspended in the atmosphere. Mists are generated by liquids condensing from a vapor back to a liquid or by breaking up a liquid into a dispersed state such as by splashing, foaming or atomizing. Aerosols are also a form of a mist characterized by highly respirable, minute liquid particles.

Fibers are solid particles whose length is several times greater than their diameter.

Gases are formless fluids that expand to occupy the space or enclosure in which they are confined. Examples are welding gases such as acetylene, nitrogen, helium and argon as well as carbon monoxide generated from the operation of internal combustion engines or by its use as a reducing gas in a heat treating operation. Another example is hydrogen sulfide, which is formed wherever there is decomposition of materials containing sulfur under reducing conditions.

Liquids change into vapors and mix with the surrounding atmosphere through evaporation. Vapors are the volatile form of substances that are normally in a solid or liquid state at room temperature and pressure. Vapors are the gaseous form of substances that are normally in the solid or liquid state at room temperature and pressure. They are formed by evaporation from a liquid or solid and can be found where parts cleaning and painting takes place and where solvents are used.

Chemical Hazards

Harmful chemical compounds in the form of solids, liquids, gases, mists, dusts, fumes and vapors exert toxic effects by inhalation (breathing), absorption (through direct contact with the skin), or ingestion (eating or drinking). Airborne chemical hazards exist as concentrations of mists, vapors, gases, fumes or solids. Some are toxic through inhalation and some of them irritate the skin on contact, some can be toxic by absorption through the skin or through ingestion, and some are corrosive to living tissue.

The degree of worker risk from exposure to any given substance depends on the nature and potency of the toxic effects and the magnitude and duration of exposure.

Information on the risk to workers from chemical hazards can be obtained from the material safety data sheet (MSDS). The MSDS is a summary of the important health, safety and toxicological information on the chemical or the mixture’s ingredients.

Biological Hazards

These include bacteria, viruses, fungi and other living organisms that can cause acute and chronic infections by entering the body either directly or through breaks in the skin. Effective personal hygiene, particularly proper attention to minor cuts and scratches, especially those on the hands and forearms, should be followed to keep worker risks to a minimum.

Workers should also use local ventilation along with proper personal protective equipment such as gloves and respirators, adequate infectious waste disposal systems, and appropriate controls including isolation as applicable.

Physical Hazards

These include excessive levels of ionizing and nonionizing electromagnetic radiation, noise, vibration, illumination, and temperature.

Where employees are exposed to ionizing radiation, time, distance and shielding are important tools in ensuring worker safety. Danger from radiation increases with the amount of time one is exposed to it; hence, the shorter the time of exposure the smaller the radiation danger.

Distance also is a valuable tool in controlling exposure to both ionizing and nonionizing radiation. Radiation levels from some sources can be estimated by comparing the squares of the distances between the worker and the source. For example, at a reference point of 10 feet from a source, the radiation is 1/100 of the intensity at 1 foot from the source.

Shielding also is a way to protect against radiation. The greater the protective mass between a radioactive source and the worker, the lower the radiation exposure.

Nonionizing radiation also is dealt with by shielding workers from the source. Sometimes limiting exposure times to nonionizing radiation or increasing the distance is not effective. Laser radiation, for example, cannot be controlled effectively by imposing time limits. An exposure can be hazardous that is faster than the blinking of an eye. Increasing the distance from a laser source may require miles before the energy level reaches a point where the exposure would not be harmful.

As much as applicable, noise will be reduced by installing equipment and systems that have been engineered, designed, and built to operate quietly; by enclosing or shielding noisy equipment; by making certain that equipment is in good repair and properly maintained with all worn or unbalanced parts replaced; by mounting noisy equipment on special mounts to reduce vibration; and by installing silencers, mufflers, or baffles.

Substituting quiet work methods for noisy ones is another way we will strive to reduce noise. Where possible, treating floors, ceilings and walls with acoustical material or erecting sound barriers at adjacent workstations around noisy operations will be considered.

We may also reduce noise exposure by increasing the distance between the source and the receiver, by isolating workers in acoustical booths, limiting workers' exposure time to noise, and by providing hearing protection. OSHA requires that workers in noisy surroundings be periodically tested as a precaution against hearing loss.

Another physical hazard, radiant heat exposure can be controlled by installing reflective shields and by providing protective clothing.

Ergonomic Hazards

The science of ergonomics studies and evaluates a full range of tasks including, but not limited to, lifting, holding, pushing, walking and reaching. Many ergonomic problems result from technological changes such as increased assembly line speeds, adding specialized tasks and increased repetition. Some problems arise from poorly designed job tasks. Any of those conditions can cause ergonomic hazards such as excessive vibration and noise, eyestrain, repetitive motion, and heavy lifting problems. Improperly designed tools or work areas also can be ergonomic hazards. Repetitive motions or repeated shocks over prolonged periods of time as in jobs involving sorting, assembling and data entry can often cause irritation and inflammation of the tendon sheath of the hands and arms, a condition known as carpal tunnel syndrome.

Ergonomic hazards are avoided primarily by the effective design of a job or jobsite and better designed tools or equipment that meet workers' needs in terms of physical environment and job tasks. Through thorough worksite analyses, employers can set up procedures to correct or control ergonomic hazards by using the appropriate engineering controls (e.g., designing or redesigning workstations, lighting, tools and equipment); teaching correct work practices (e.g., proper lifting methods); employing proper administrative controls (e.g., shifting workers among several different tasks, reducing production demand and increasing rest breaks); and, if necessary, providing and mandating personal protective equipment. Evaluating working conditions from an ergonomics standpoint involves looking at the total physiological and psychological demands of the job on the worker.

Hazard Controls

Engineering controls include eliminating toxic chemicals and replacing harmful toxic materials with less hazardous ones, enclosing work processes or confining work operations, and installing general and local ventilation systems.

Work practice controls alter the manner in which a task is performed. Some fundamental and easily implemented work practice controls that we may utilize include (1) following proper procedures that minimize exposures while operating production and control equipment; (2) inspecting and maintaining process and control equipment on a regular basis; (3) implementing good housekeeping procedures; (4) providing good supervision and (5) mandating that eating, drinking, smoking, chewing tobacco or gum, and applying cosmetics in regulated areas be prohibited.

Administrative controls that we may utilize include controlling employees' exposure by scheduling production and workers' tasks, or both, in ways that minimize exposure levels.

When effective work practices and engineering controls are not feasible to achieve the permissible exposure limit, or while such controls are being instituted, and in emergencies, appropriate respiratory equipment will be used. In addition, personal protective equipment such as gloves, safety goggles, helmets, safety shoes, and protective clothing may also be required. To be effective, personal protective equipment must be individually selected, properly fitted and periodically refitted; conscientiously and properly worn; regularly maintained; and replaced as necessary.

Permissible Exposure Limits (PELs)

OSHA sets enforceable permissible exposure limits (PELs) to protect workers against the health effects of exposure to hazardous substances. PELs are regulatory limits on the amount or concentration of a substance in the air. They may also contain a skin designation. OSHA PELs are based on an 8-hour time weighted average (TWA) exposure.

Permissible exposure limits (PELs) are addressed in specific standards for the general industry, shipyard employment, and the construction industry.

Sampling and Analysis

Chemical sampling and analysis will be used to assess workplace contaminants and associated worker exposures.

Sampling and analysis hazards are addressed in specific standards for the general industry. The specific standard will be used to assess each chemical.

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. Please reference the standard for all requirements that may be applicable to your company.)*

Isocyanates Policy
(Ref. 29 CFR 1910.1000)

Overview

Isocyanates are compounds containing the isocyanate group (−NCO). They react with compounds containing alcohol (hydroxyl) groups to produce polyurethane polymers, which are components of polyurethane foams, thermoplastic elastomers, spandex fibers, and polyurethane paints. Isocyanates are the raw materials that make up all polyurethane products. Jobs that may involve exposure to isocyanates include painting, foam-blowing, and the manufacture of many Polyurethane products, such as chemicals, polyurethane foam, insulation materials, surface coatings, car seats, furniture, foam mattresses, under-carpet padding, packaging materials, shoes, laminated fabrics, polyurethane rubber, and adhesives, and during the thermal degradation of polyurethane products.

Health effects of isocyanate exposure include irritation of skin and mucous membranes, chest tightness, and difficult breathing. Isocyanates include compounds classified as potential human carcinogens and known to cause cancer in animals. The main effects of hazardous exposures are occupational asthma and other lung problems, as well as irritation of the eyes, nose, throat and skin.

Engineering controls are the most effective way of reducing exposure. Where possible, we will enclose or isolate operations and/or provide local exhaust ventilation at the site of chemical release.

Safe Work Practices

- Personal protective equipment should be used to prevent or minimize exposure. Gloves, goggles and/or face shields should be used to prevent skin contact as well as other garments as necessary.
- Additionally, respiratory protection may be needed if exposure levels exceed the limits set for the type of isocyanate used. Refer to the MSDS for proper PPE and if a respirator is necessary.
- PPE should be well maintained and cleaned after every use.
- Employees are to wash thoroughly immediately after exposure to and at the end of the work shift.
- Hazard signs will be posted in the work areas along with warning information.
- If contaminants get on clothing, the employee is to change into clean clothing promptly.
- No eating, drinking or smoking is allowed in work areas where chemicals are being handled, processed or stored.

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. Please reference the standard for all requirements that may be applicable to your company.)*

Ladder Safety Program
(Ref. 29 CFR 1910.25-27)

Ladders must be maintained in good condition at all times. Ladders that are not in good condition will be placed out of service immediately with a tag stating "out of service." The employee will submit a maintenance request/work order for ladder repair.

Inspections

Portable ladders will be visually inspected each day prior to use.

Other ladders will be inspected at least annually or more often if the conditions of use or location necessitate more frequent inspection.

Loads

Self-supporting (foldout) and non-self-supporting (leaning) portable ladders must be able to support at least four times the maximum intended load, except extra-heavy-duty metal or plastic ladders, which must be able to sustain 3.3 times the maximum intended load.

Angle

Non-self-supporting ladders, which must lean against a wall or other support, are to be positioned at such an angle that the horizontal distance from the top support to the foot of the ladder is about one-fourth the working length of the ladder.

In the case of job-made wooden ladders, that angle should equal about one-eighth the working length. This minimizes the strain of the load on ladder joints that may not be as strong as on commercially manufactured ladders.

Rungs

Ladder rungs, cleats or steps must be parallel, level and uniformly spaced when the ladder is in position for use. Rungs must be spaced between 10 and 14 inches apart. For extension trestle ladders, the spacing must be 8–18 inches for the base, and 6–12 inches on the extension section. Rungs must be so shaped that an employee's foot cannot slide off, and they must be skid resistant.

Slipping

Ladders are to be kept free of oil, grease, wet paint and other slipping hazards. Wood ladders must not be coated with any opaque covering, except identification or warning labels on one face only of a side rail.

Other Requirements

Foldout or stepladders must have a metal spreader or locking device to hold the front and back sections in an open position when in use. When two or more ladders are used to reach a work area, they must be offset with a landing or platform between the ladders.

The area around the top and bottom of a ladder must be kept clear. Ladders must not be tied or fastened together to provide longer sections, unless they are specifically designed for such use. Never use a ladder for any purpose other than the one for which it was designed.

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. The standard should be referenced to ensure that all requirements are being met.)*

Lead Policy
(Ref. 29 CFR 1910.1025)

Exposure Limits

The permissible exposure level for lead is 50 micrograms per cubic meter of air (50 $\mu g/m^3$) averaged over an 8-hour period.

Action level is 30 micrograms per cubic meter of air (30 $\mu g/m^3$) averaged over an 8-hour period.

Exposure Monitoring and Determination

We have assessed the workplace and work operations and have determined that some employees may be exposed to lead at or above the action level.

Initial Monitoring

We have conducted initial exposure monitoring to determine exposure to lead for each worker. We have taken a sufficient number of personal breathing zone air samples to accurately characterize full shift exposure on each shift, for each job classification, and in each work area.

Monitoring results will indicate the worker's time weighted average exposure to lead over a typical 8-hour workday. In some cases, we will monitor all exposed workers, while in cases where workers perform the same job under the same conditions, we will only monitor "representative" personnel.

Periodic Monitoring

Periodic monitoring will be conducted quarterly when initial monitoring shows that the worker's exposure is at or above the action level

Monitoring Frequency

If initial monitoring shows exposures above the PEL, but subsequent periodic measurements indicate that exposures have fallen to levels at or below the PEL, but still above the action level, we will reduce the frequency of periodic monitoring to every six months. We will discontinue periodic monitoring for workers represented by monitoring results indicating that exposures have fallen below the action level if those results are confirmed by a second measurement taken seven days later.

Additional Monitoring

Additional monitoring will be conducted when a workplace change results in new or additional exposures to lead or we have reasons to believe that new or additional exposures have occurred. These changes include alterations in the production process, raw materials, equipment, personnel, work practices, or control methods used in the workplace.

Regulated Areas

We will regulate areas wherever a worker's exposure to lead exposure is or is reasonably expected to be above the PEL. The regulated areas will be distinguishable from the rest of the workplace in a manner that adequately establishes and alerts workers to the boundaries of the regulated area.

This may be conducted by the use of warning signs, gates, ropes, barricades, lines, textured flooring, or other methods that may be appropriate. Whatever methods are chosen will effectively warn workers not to enter the area unless they are authorized.

Authorized personnel are those required by their job duties to be present in the area and may include maintenance/repair personnel, managers and quality control engineers. Also, designated worker representatives may enter the regulated area to observe exposure monitoring.

All people who enter the regulated area will use proper protective equipment, including respirators when appropriate.

Control Measures

To protect workers from lead hazards, whenever exposures exceed the PEL, we will use engineering and work practice controls to reduce and maintain lead exposures to or below the PEL. These are the most effective controls.

Whenever feasible engineering and work practice controls are not sufficient to reduce exposures to or below the PEL, we will use such controls to reduce exposures to the lowest levels achievable and supplement them by the use of respiratory protection.

Engineering controls include substitution (using a less toxic material or process that results in lower exposures), isolation (such as enclosing the source of exposure), and ventilation (such as using a local exhaust system that captures lead near its source).

When ventilation is used to control exposure, measurements that demonstrate the effectiveness of the system in controlling exposure, such as capture velocity, duct velocity, or static pressure will be made at least every three months. Measurements of the system's effectiveness in controlling exposure will be made within five days of any change in production, process or control that might result in a change in employee exposure to lead.

Work practice controls involve adjustments in the way a task is performed. Workers will be trained on the proper way to perform a task in order to minimize their exposure and to maximize the effectiveness of the control. In many cases, work practice controls complement engineering controls in providing worker protection.

Respiratory Protection

We will provide workers with respirators when feasible engineering and work practice controls are unable to reduce worker exposure to lead to levels at or below the PEL.

Respirators are required during:

- Work operations such as maintenance and repair activities for which engineering and work practice controls are not feasible.
- Emergencies (i.e., any occurrence that results or is likely to result in an uncontrolled release of lead that is not an incidental release that can be controlled by workers in the immediate area or by maintenance personnel).
- Where workers are exposed above the PEL for fewer than 30 days per year and the employer has opted not to implement engineering/work practice controls to achieve the PEL.
- Periods necessary to install or implement feasible engineering and work practice controls.
- Operations where all feasible engineering and work practice controls have been implemented but are not sufficient to reduce exposures to or below the PEL.

Where respirator use is required, employees will follow our respirator program.

Requirements for Protective Work Clothing and Equipment

We will provide and ensure the proper use of appropriate protective clothing and equipment whenever a hazard evaluation of the workplace has identified that skin or eye contact with lead presents or is likely to present a hazard to workers. Where such a hazard is identified, we will select the clothing and equipment needed to protect workers from lead hazards.

Some examples of protective clothing and equipment that may be necessary include, but are not limited to, gloves, aprons, coveralls, foot coverings and goggles. Normal street clothing and uniforms or other accessories that do not protect workers from lead hazards are not considered protective clothing or equipment under the standard. Employers must provide and maintain the clothing and equipment at no cost to the worker.

The following precautions must be taken to protect workers and others who handle protective clothing and equipment:

We will ensure that workers remove protective clothing and equipment that has become contaminated with lead either at the end of their work shift or when they complete their tasks involving lead exposure, whichever comes first.

We will not allow any worker to remove contaminated protective clothing or equipment from the workplace, except for those workers whose job it is to launder, clean, maintain, or dispose of the clothing or equipment.

When contaminated protective clothing or equipment is removed for laundering, cleaning, maintenance or disposal, we will ensure that it is stored and transported in sealed, impermeable bags or other closed, impermeable containers.

Bags or containers of contaminated protective clothing or equipment that are removed from change rooms for laundering, cleaning, maintenance or disposal will be labeled in accordance with the Hazard Communication Standard.

We will clean, launder, repair and replace protective clothing and equipment as necessary to ensure that the effectiveness of the clothing and equipment is maintained.

We will inform any person who launders or cleans protective clothing or equipment contaminated with lead of the potentially harmful effects of lead exposure, and that the clothing and equipment should be laundered or cleaned in a manner that minimizes skin or eye contact with lead and prevents exposure to lead in excess of the PEL. Removal of lead from protective clothing and equipment by blowing, shaking, or any other means that disperses lead into the air or onto a worker's body is prohibited.

Hygiene Areas and Practices

Change rooms are required when workers change out of their street clothes to use protective clothing and equipment. The change rooms must prevent lead contamination of street clothes, and will be equipped with separate storage facilities for protective clothing and equipment and for street clothes. This will limit exposures after the work shift ends and avoid the contamination of workers' cars and homes.

Washing facilities will be provided and readily accessible and capable of removing lead from the skin. We will ensure that affected workers use these facilities when necessary. This includes making sure that workers who have skin contact with lead wash their hands and faces at the end of the work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet.

Eating and drinking areas and surfaces will be maintained as free as practicable of lead whenever employers allow workers to consume food or beverages at a worksite where lead is present. We will ensure that workers do not enter eating and drinking areas wearing protective clothing or equipment, unless the protective clothing or equipment is properly cleaned beforehand. **No one should blow dust off protective clothing and equipment.**

We will ensure that workers do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics—or carry or store products associated with these activities—in regulated areas or in areas where skin or eye contact with lead occurs.

Housekeeping

Proper housekeeping requirements are important because they target sources of exposure to lead that engineering controls are generally not designed to address.

We will ensure that all surfaces are maintained as free as practicable of accumulations of lead.

Cleaning Methods

Surfaces contaminated with lead will be cleaned by HEPA filtered vacuuming or other methods that minimize exposure to lead, including wet methods such as wet sweeping or wet scrubbing. Dry methods (e.g., dry shoveling, dry sweeping and dry brushing) are only allowed in cases where HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure to lead have been tried and found not to be effective.

The use of compressed air for cleaning surfaces is only allowed when used in conjunction with a ventilation system designed to capture the dust cloud or when no alternative method is feasible.

Employees should use caution whenever compressed air is used as a cleaning method, since the air will spread the contamination further unless the dust is appropriately collected. Compressed air should never be directed at other workers and should not be used to clean protective clothing or equipment.

We will ensure that waste, scrap, debris and any other materials contaminated with lead are collected and disposed of in sealed, impermeable bags or other closed, impermeable containers.

Additionally, bags or containers of waste, scrap, debris and any other materials contaminated with lead must be labeled.

Medical Surveillance

The purpose of medical surveillance is to determine if an individual can be exposed to lead at his or her workplace without experiencing adverse health effects; to identify lead-related adverse health effects when they do occur so that appropriate intervention measures can be taken; and to determine a worker's fitness to use personal protective equipment such as respirators. All medical examinations and procedures will be performed by or under the supervision of a physician or other licensed healthcare professional (PLHCP).

When medical surveillance is required, it will be provided at no cost to workers and at a reasonable time and place. If participation requires travel away from the worksite, the employer must bear the cost. Workers will be paid for time spent taking medical examinations, including travel time.

Employers must provide medical surveillance to workers who are or may be exposed above the action level for more than 30 days per year.

Biological Monitoring

We will make available biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels to each employee exposed to lead at the following schedule:

- At least every six months to each employee
- At least every two months for each employee whose last blood sampling and analysis indicated a blood lead level at or above 40 µg/100 g of whole blood. This frequency shall continue until two consecutive blood samples and analyses indicate a blood lead level below 40 µg/100 g of whole blood
- At least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level.

Follow-Up Blood Sampling Tests

Whenever the results of a blood lead level test indicate that an employee's blood lead level exceeds the numerical criterion for medical removal, we will provide a second (follow-up) blood sampling test within two weeks after the employer receives the results of the first blood sampling test.

Medical Examinations

- Medical examinations will be conducted annually for each employee for whom a blood sampling test conducted at any time during the preceding 12 months indicated a blood lead level at or above 40 µg/100 g.
- Prior to assignment for each employee being assigned for the first time to an area in which airborne concentrations of lead are at or above the action level.
- As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use.
- As medically appropriate for each employee either removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited pursuant to a final medical determination.

Contents of Medical Examination

- A detailed work history and a medical history, with particular attention to past lead exposure (occupational and non-occupational), personal habits (smoking, hygiene), and past gastrointestinal, hematologic, renal, cardiovascular, reproductive and neurological problems.
- A thorough physical examination, with particular attention to teeth, gums, hematologic, gastrointestinal, renal, cardiovascular, and neurological systems. Pulmonary status should be evaluated if respiratory protection will be used.
- A blood pressure measurement.
- A blood sample and analysis that determines blood lead level; hemoglobin and hematocrit determinations, red cell indices, and examination of peripheral smear morphology; zinc protoporphyrin; blood urea nitrogen; and, serum creatinine; routine urinalysis with microscopic examination; and any laboratory or other test that the examining physician deems necessary by sound medical practice.

Information Provided to the PLHCP

We will ensure that the PLHCP has a copy of the Lead Standard and must provide the PLHCP with:

- A description of the affected worker's former, current and anticipated duties as they relate to lead exposure.
- Information on the worker's former, current and anticipated lead exposure levels.
- Prior blood lead determinations.
- A description of any personal protective equipment used or to be used by the worker, including when and for how long the worker has used that equipment.
- Information from records of employment-related medical examinations previously provided to the affected worker, currently within the control of the employer.

Written Medical Opinion

We will obtain a written medical opinion from the PLHCP for each medical examination performed. The written medical opinion must be obtained within 30 days of the examination and must contain:

- The PLHCP's opinion as to whether the worker has any detected medical condition(s) that would place the worker at increased risk of material impairment to health from further exposure to lead.
- Any recommended limitations on the worker's exposure to lead or on the use of personal protective equipment such as respirators.
- A statement that the PLHCP has explained to the worker the results of the medical examination, including any medical conditions related to lead exposure that require further evaluation or treatment, and any special provisions for the use of protective clothing or equipment.

The PLHCP will not reveal to the employer any specific findings or diagnoses that are not related to workplace lead exposure. We will provide a copy of the written medical opinion to the examined worker within two weeks after receiving it.

Worker Training and Communication

It is critically important that workers recognize the hazards associated with exposure to lead and understand the measures they can take to protect themselves. Training will be provided initially and annually thereafter.

- The requirements of the Lead Standard.
- The medical surveillance program required by the standard, including recognition of the signs and symptoms of adverse health effects that may result from lead exposure.

We will also have a copy of the Lead Standard available without cost to affected workers.

Recordkeeping

Accurate records can demonstrate employer compliance with the standard and can assist in diagnosing and identifying workplace related illnesses. Therefore, we will maintain records of worker lead exposures (including air monitoring data, historical monitoring data and objective data), biological monitoring data and medical surveillance records.

Air Monitoring Data

We will keep an accurate record of all air monitoring performed to comply with the standard. The record will indicate:

- The date of the measurement for each sample taken.
- The operation involving exposure to lead that was monitored.
- Sampling and analytical methods used and evidence of their accuracy.
- The number, duration and results of samples taken.
- The type of personal protective equipment used (e.g., type of respirators worn).
- The name, Social Security number and job classification of all workers represented by the monitoring, specifying which workers were actually monitored.

Medical Surveillance

We will maintain an accurate record for each worker provided medical surveillance under the standard. The record will include the following information about the worker:

- Name and Social Security number.
- A copy of the PLHCP's written opinions.
- A copy of the information that the employer was required to provide to the PLHCP (i.e., a description of the worker's duties as they relate to occupational lead exposure; the worker's lead exposure levels; a description of the personal protective equipment used by the worker; biological monitoring, and information from previous employment-related medical examinations).

We will maintain or ensure that the physician maintains those medical records for at least 40 years, or for the duration of employment plus 20 years, whichever is longer.

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example written program and may be modified to meet the company's needs. The standard requires only your lockout/tagout procedures and inspections to be in writing. The standard should be referenced to ensure that all requirements are being met.)*

Lockout/Tagout (Control of Hazardous Energy) Program (Ref. 29 CFR 1910.147)

The purpose of the lockout/tagout (LOTO) program is to provide a system for the locking out and/or tagging out of energy-isolating devices to protect employees from the unexpected energization or startup of machines or equipment, or the release of stored energy that could cause injury to the employee. Wherever possible, energy-isolating devices should be locked out. Before employees service, repair or perform maintenance, the machine or equipment must be isolated from all hazardous energy, and the energy isolation-device(s) for the machine or equipment must be locked out or tagged out.

Types and Magnitude of Energy and Hazards

Each employee must be instructed in the types and magnitude of energy used by the company. The following types of energy are used:

(a) _____ (b) _____

The magnitude of energy (a) (_____ energy) used is: _____; the magnitude of hazards presented by the _____ energy is: _____.

The magnitude of energy (b) (_____ energy) used is: _____; the magnitude of hazards presented by the _____ energy is: _____.

Training and Retraining of Affected and Authorized Employees

Each employee must be thoroughly trained with respect to lockout/tagout procedure used by our company. Each employee must know that lockout/tagout is used to protect employees against hazardous energy from inadvertent operation of equipment or machinery. Each employee must understand that he or she is to never attempt to operate an energy-isolating device when it is locked or tagged. Each employee must be retrained if there is a change in the employee's job assignment, a change in machinery or equipment that presents a new hazard, a change in energy control procedures, or management considers that retraining is necessary.

Training or retraining must include:

- How to recognize hazardous energy sources.
- Type and magnitude of energy used especially with respect to the machinery or equipment to which the employee will be exposed.
- Purpose of the lockout/tagout procedure.
- Steps for shutting down, isolating, blocking and securing equipment to which the employee will be exposed.
- Steps for placement, removal and transfer of lockout/tagout devices and the division of responsibility for accomplishing those tasks.
- Requirements for testing to determine and verify effectiveness of lockout/tagout devices.
- The proper use and limitations of tags.

Employees who will use (actually implement) the lockout/tagout procedure must receive written authorization from supervision.

Energy-Isolating Devices

Each employee must be instructed that every department has conducted a survey of all machinery, equipment and processes that possess potentially hazardous energy. The survey located all equipment and identified all isolating devices that must be locked or tagged to render the equipment safe for service, maintenance or repair and describe applicable lockout/tagout procedure. The information for each item of machinery or equipment has been recorded on Form A, which is maintained in the respective department and is readily available for use in conjunction with the lockout/tagout procedure.

Form A will be used whenever a new piece of equipment or machine is introduced into the work area or whenever a new procedure needs to be developed due to a change in process, machine or equipment making previous procedure invalid.

Form A
Types/Locations of Energy-Isolating Devices

1. Name of department: _____
2. Name of equipment or machine: _____
3. Serial number of equipment or machine: _____
4. Location of equipment or machine: _____
5. Each type of energy used by the equipment or machine:
   a. _____
   b. _____
6. Magnitude of each source of energy:
   a. _____
   b. _____
7. Hazards to be expected from each source of energy:
   a. _____
   b. _____
8. Type and location of each device for isolating energy to the machine or equipment and the method of lockout/tagout to be used (use an additional form, if needed):

Type	Location	Method of Lockout/Tagout
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

9. Identification of each device and manner by which energy can be stored in the machine or equipment and identification of the procedure for dissipating or restraining the stored energy (use additional form, if needed):

Procedure	Device/Manner
a. _____	
b._____	

Sequence of Lockout/Tagout System—Procedure and Form

Each employee will be informed of the lockout/tagout sequence. That sequence includes the following steps:

Step One—The authorized employee (designated by supervision to implement lockout/tagout) will notify all affected employees (operators and others in the area) that lockout/tagout is to be used and the reason for its use. Use Form A, "Types/Locations of Energy-Isolating Devices," for the respective machine or equipment lists all pertinent information, including the magnitude of energy and the hazards to be expected.)

Step Two—The machine must be shut down by normal procedure.

Step Three—Each energy-isolating device must be located. (Use information from Form A for the respective machine or equipment.) Each device must be operated to isolate the equipment from the energy source(s).

Step Four—Each device or manner by which energy can be stored must be located. (Use information from Form A for the respective machine or equipment.)

Step Five—After responding to important notes (below), each energy-isolating device (information from Form A for the respective machine or equipment) must now be locked or tagged with assigned individual locks or tags.

Note:

- If a lock can be used, but a tag is chosen instead, complete a tagout justification before going on to step six.
- If more than one authorized employee is required to affix a lockout/tagout device (see group lockout), the designated group coordinator must have each authorized employee who affixes a lockout/tagout device sign his/her name and enter job title. Use a separate sheet if needed.

Step Six—(a) Ensure that personnel are not exposed; (b) attempt to start the equipment with the normal operating controls to ensure that lockout/tagout is effective; (c) return the operating controls to "neutral" or "off." The equipment is now properly locked or tagged out.

Tagout Justification System

If the machine, equipment or process can be locked out and/or tagged out and a tag is chosen instead, respond to parts one and two of the following tagout justification system, then return to Sequence for LOTO, Step Six.

Requirement One

Full Employee Protection. If you cannot indicate a "yes" answer by checking each of the following items, do not use the tagout system:

- Tagout system provides full employee protection.
- Tagout devices placed at the same location where the lockout device would have been placed.
- Tagout system provides safety equivalent to the lockout program.
- Employees can fully comply with all tagout-related provisions.

Additional Safety Measures. Check the measure(s) used to provide equivalent protection and/or state any other alternative used:

- Isolating circuit element removal.
- Control switches blocked.
- Extra disconnecting device opened.
- Removal of valve handles.
- Alternative measures used to provide equivalent protection: _____.

Tagout Device. Check the tagout device against each criterion listed below. The tagout device should satisfy each criterion:

- Singularly identified.
- Device used only for controlling energy.
- Not used for other purposes.
- Durable/substantial.
- Able to withstand its intended environment.
- Nonreusable.
- Attachable by hand.
- Self-locking.
- Indicates employee identity.
- Exposure will not cause deterioration.
- Does not deteriorate in corrosive environment.
- Standardized as to: ___color; ___shape and size; ___print and format.
- Minimum unlocking strength of no less than 50 pounds.
- Equivalent to a one piece, all environment-tolerant nylon cable tie.

Warning Message. Ensure that the tagout device:

- Warns against hazardous conditions.
- Includes "Do Not Start (Open, Close, Energize, Operate, etc.)"

Training. Be certain that the employees have been trained that:

- Tags are simply warning devices.
- Tags do not provide physical restraint.
- Tags must never be removed without authorization.
- Tags may evoke a false sense of security.
- Tags are only part of the overall program.
- Tags must be securely attached.
- Tags must never be ignored or bypassed.

Requirement Two

A. State your reasons for using the tagout system:

_____

_____

_____

B. State how equivalent employee protection was provided:

_____

_____

_____

C. Describe the training provided to employees:

_____

_____

_____

At which location was the training provided:

_____

Include the date of the employee training:

_____

Include the signature of the person who performed the training:

_____

Include signature and date of the person who authorized the use of the tagout system:

_____

Procedure for Restoring Machines or Equipment to Normal Production Operations:

- When servicing, maintenance or repair is complete and the equipment/machine is ready to be started up, the authorized employee will ensure that: (a) no one is exposed to the equipment/machine; (b) all tools have been removed from the machine/equipment; (c) guards have been reinstalled; (d) there are no exposed electrical wires; (e) and that he or she is satisfied that it is safe for start up.
- After responding to important notes (below), remove all lockout/tagout devices.

Note:

- If the authorized employee is not available to remove the lockout/tagout devices, the devices may only be removed by or under the direction of the supervisor who completes the following:
  (a) Identify the authorized employee whose device is being removed (insert name).
  (b) Describe all reasonable efforts to locate this employee: (insert efforts made).
  (c) Describe the action taken to ensure that, prior to his or her resumption of work, the employee knows that the device was removed (insert efforts made).
  (d) Enter signature and date of supervisor to certify the above steps were taken (insert signature and date).
- If more than one authorized employee is required to remove a lockout/tagout device, the designated group coordinator will have each employee who removes a device sign his or her name and enter the job title.

  Name(s)/Titles:

  _____

  _____

- Operate the devices to restore energy to the machine/equipment.

Temporary Removal of Lockout/Tagout Devices

When testing, the positioning of machines/equipment or other requirements demand the temporary removal of lockout/tagout devices, the authorized employee or supervisor must: (a) follow the sequence steps one through three; (b) conduct the tests or position the equipment; and (c) de-energize all systems and reapply energy control measures in accordance with policy.

Outside Contractors

If the maintenance, service or repair is performed by an outside contractor, the supervisor must appoint an employee to serve as the outside contractor's authorized employee for the purposes of this policy.

Group Lockout or Tagout

When group lockout/tagout is required and when more than one group is involved, a group coordinator must be designated by supervision. The designated group coordinator must seek agreement from the other authorized employees and must ensure that each authorized employee: (a) places his or her personal lockout or tagout device on the energy-isolating devices; or (b) places the device on a multiple lockout/tagout device (hasp) if the device cannot accept multiple locks/tags; or (c) secures the personal lock to a multiple-lock lockout box or cabinet that holds the key to the single lock on the energy-isolating device; and (d) signs and enters his/her job title at the time of affixing and removing the device.

Documentation of Employee Training

Documentation must be completed for each employee following every training or retraining session. Refer to form "Lockout/Tagout Training Documentation."

Lockout/Tagout Training Documentation

Name of Equipment/Procedure	_____
Employee Name:	_____
Employee Address:	_____
Home Phone:	(_____) – _____ – _____
Cell Phone:	(_____) – _____ – _____
Job Title:	_____
Department:	_____
Date of Training or Retraining:	_____ / _____ / _____
Signature of Employee:	_____
Signature of Trainer:	_____
Is the employee authorized to implement lockout/tagout procedure?	☐ Yes ☐ No
Date Authorized:	_____ / _____ / _____
Authorizing Supervisor's Signature:	_____

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. Please reference the standard for all requirements that may be applicable to your company.)*

Machine Guarding Program
(Ref. 29 CFR 1910.211-219)

The purpose of machine guarding is to protect the machine operator and other employees in the work area from hazards created by ingoing nip points, rotating parts, flying chips and sparks. All employees will follow our policy on guarding. Any discrepancy to our policy without authorization from the Safety Coordinator or management will result in disciplinary action.

General Requirements

Guards will not create potential hazards and must be attached to the machine where possible. If guards cannot be attached to the machine, attach elsewhere.

Point of Operation Guarding

The point of operation is the area on a machine where work is performed.

Machines that expose an employee to injury must be guarded. The guarding device must:

- Be in conformity with any appropriate standards.
- If specific standards are not available, the machine construction should prevent the operator from having any part of his/her body in the danger zone during the operating cycle.
- Special hand tools used for placing and removing material from point of operation areas must allow easy handling of the material without the operator placing a hand in the danger zone. Such tools must not replace guards required by this section.

The following machines usually require point of operation guarding:

- Guillotine cutters
- Shears
- Alligator shears
- Power presses
- Milling machines
- Power saws
- Jointers
- Portable power tools
- Forming rolls and calendars

Requirements for Safeguards

Safeguards will meet these minimum general requirements:

- Prevent contact: The safeguard must prevent hands, arms and any other part of a worker's body from making contact with dangerous moving parts. A good safeguarding system eliminates the possibility of the operator and other workers placing parts of their bodies near hazardous moving parts.
- Secure: Workers should not be able to easily remove or tamper with the safeguard, because a safeguard that can easily be made ineffective is no safeguard at all. Guards and safety devices should be made of durable material that will withstand the conditions of normal use. They must firmly be secured to the machine.

- Protect from falling objects: The safeguard should ensure that no objects can fall into moving parts. A small tool that is dropped into a cycling machine could easily become a projectile that could strike and injure someone.
- Create no new hazards: A safeguard defeats its own purpose if it creates a hazard of its own such as a shear point, a jagged edge or an unfinished surface that can cause a laceration. The edges of guards, for instance, should be rolled or bolted in such a way that they eliminate sharp edges.
- Create no interference: Any safeguard that impedes a worker from performing the job quickly and comfortably might soon be overridden or disregarded. Proper safeguarding can actually enhance efficiency as it can relieve the worker's apprehensions about injury.
- Allow safe lubrication: If possible, one should be able to lubricate the machine without removing the safeguards. Locating oil reservoirs outside the guard, with a line leading to the lubrication point, will reduce the need for the operator or maintenance worker to enter the hazardous area.

Miscellaneous Aids

While these aids do not give complete protection from machine hazards, they may provide the worker with an extra margin of safety. Sound judgment is needed in their application and usage. Examples of possible application include the following:

- An awareness barrier serves as a reminder to a person that he or she is approaching the danger area. Although the barrier does not physically prevent a person from entering the danger area, it calls attention to it. For an employee to enter the danger area, an overt act must take place, that is, the employee must either reach or step over, under or through the barrier. Generally, awareness barriers are not considered adequate when continual exposure to the hazard exists.
- Special hand tools may be used to place or remove stock, particularly from or into the point of operation of a machine. A typical use would be for reaching into the danger area of a press or press brake. A push stick or block may be used when feeding stock into a saw blade. When it becomes necessary for hands to be in close proximity to the blade, the push stick or block may provide a few inches of safety and prevent a severe injury.

Feeding and Ejection Methods

Many feeding and ejection methods do not require workers to place their hands in the danger area. In some cases, no operator involvement is necessary after the machine is set up. In other situations, operators can manually feed the stock with the assistance of a feeding mechanism. Properly designed ejection methods do not require any operator involvement after the machine starts to function. Using these feeding and ejection methods does not eliminate the need for guards and devices. Guards and devices must be used wherever they are necessary and possible in order to provide protection from exposure to hazards.

Automatic Feed:

- Stock is fed from rolls, indexed by machine mechanism, etc.
- Eliminates the need for operator involvement in the danger area.
- Other guards are required for worker protection, usually fixed barrier guards.
- Requires frequent maintenance.
- May not be adaptable to stock variation.

Semiautomatic Feed:

- Stock is fed by chutes, movable dies, dial feed, plungers or sliding bolster.

Automatic Ejection:

- Work pieces are ejected by air or mechanical means.
- May create a hazard of blowing chips or debris.
- Size of stock limits the use of this method.
- Air ejection may present a noise hazard.

Semiautomatic Ejection:

- Work pieces are ejected by mechanical means that are initiated by the worker.
- Operator does not have to enter danger area to remove finished work.
- Other guards are required for operator protection.
- May not be adaptable to stock variation.

Machinery Maintenance and Repair

Good maintenance and repair procedures contribute significantly to the safety of the maintenance crew, as well as that of machine operators. The variety and complexity of machines to be serviced, the hazards associated with their power sources, the special dangers that may be present during machine breakdown, and the severe time constraints often placed on maintenance personnel all make safe maintenance and repair work difficult. If possible, machine design should permit routine lubrication and adjustment without removal of safeguards. When safeguards must be removed and the machine serviced, the lockout procedure must be adhered to. The maintenance and repair crew must never fail to replace the guards before the job is considered finished and the machine released from lockout. In order to prevent hazards while servicing machines, each machine or piece of equipment should be safeguarded during the conduct of servicing or maintenance by:

- Notifying all affected employees (usually machine or equipment operators or users) that the machine or equipment must be shut down to perform some maintenance or servicing.
- Stopping the machine.
- Isolating the machine or piece of equipment from its energy source.
- Locking out or tagging out the energy source.
- Relieving any stored or residual energy.
- Verifying that the machine or equipment is isolated from the energy source.

Although this is the general rule, there are exceptions when the servicing or maintenance is not hazardous for an employee, when the servicing conducted is minor in nature, done as an integral part of production, and the employer utilizes alternative safeguards that provide effective protection. When the servicing or maintenance is completed, there are specific steps that must be taken to return the machine or piece of equipment to service. These include:

- Inspection of the machine or equipment to ensure that all guards and other safety devices are in place and functional.
- Checking the area to ensure that energization and start up of the machine or equipment will not endanger employees.
- Removal of the lockout devices.
- Re-energization of the machine or equipment.
- Notification of affected employees that the machine or equipment may be returned to service.

If it is necessary to oil machine parts while the machine is running, special safeguarding equipment may be needed solely to protect the oiler from exposure to hazardous moving parts. Maintenance personnel must know which machines can be serviced while running and which cannot. The danger of accident or injury is greatly reduced by shutting off and locking out all sources of energy.

Exposure of Blades

When the periphery of the blades of a fan is less than 7 feet above the floor or working level, the blades must be guarded. The guard must not have openings larger than ½ inch.

Eye and Face Protection

Eye and face protection must be provided to each employee when exposed to eye or face hazards from flying particles.

Energy Control Procedures

The employer must establish an energy control program consisting of energy control procedures, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or equipment, the machine or equipment is isolated from the energy source and rendered inoperative.

Safe Work Practices

- Ensure equipment and machines are equipped with appropriate safeguards.
- Utilize personal protective equipment when necessary.
- Ensure employees receive machine-specific training.
- Do not defeat machine safeguards.
- Inspect equipment before each use.
- Provide assistance in machine safeguard development.
- Get assistance in the selection of personal protective equipment.
- Operate machines with all safeguards in place.
- Follow established safe work practices.
- Report any equipment/machine malfunctions or defects to the supervisor.

Employees will conduct an inspection of each piece of equipment or machine before use to ensure that the equipment is in good working order and that all guards are function appropriately and are in place. Any equipment/machine not in good working order will be brought to the attention of the safety coordinator for servicing.

The safety coordinator will conduct periodic documented inspections of the equipment/machines using the inspection form located at the end of this policy. The forms will be kept for a period of at least one year.

Machines and Machine Guarding Inspection Form

Location:	**Supervisor:**
Date:	**Audit Performed By:**

	Y	N	NA	COMMENTS
A. General Requirements for Machines and Machine Guarding				
1. Guards prevent worker's hands, arms or other body parts from making contact with moving parts				
2. Guards firmly secured and not easily removable				
3. Guards permit safe, comfortable, and relatively easy operation of the machine				
4. Machine controls within easy reach of the employee				
5. Procedures established to ensure machine is shut down before guard is removed				
B. Guarding of Mechanical Hazards				
1. Point-of-operation guards provided and in place				
2. Gears, sprockets, pulleys, and flywheels guarded				
3. Belts and chain drives guarded				
4. Exposed set screws, key ways, collars, and the like guarded				
5. Guards provide for any other hazardous moving part of the machine				
C. Evaluation of Non-mechanical Hazards				
1. Noise measurements taken, where necessary				
2. Substances used in machine operations evaluated				
3. Electrical cords or connectors in good repair				
4. Personal protective equipment available, where necessary				
5. Employee dressed safely for the job				
D. Training				
1. Employees trained in the recognition of machine hazards and the importance of using safeguards				
2. Lockout/tagout training provide, where necessary				
3. Electrical safety-related work practices training provided, where necessary				
4. Personal protective equipment training provided, where necessary				

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. The assessments must be in writing. Please modify or delete content to these policies as deemed necessary. The standard should be referenced to ensure that all requirements are being met.)*

Personal Protective Equipment Program (Ref. 29 CFR 1910.132)

Protective Equipment

When engineering and work practice controls do not completely eliminate hazards, it is necessary to protect workers with personal protective equipment. Personal protective equipment (PPE) includes hard hats, safety belts, safety goggles, face shields, gloves, aprons, toe guards and respirators. Supervisors will ensure that all their employees are properly protected.

Every effort will be made to select personal protective equipment that is acceptable for comfort, appearance and utility.

Hazard Assessments

The company will assess the hazards in the workplace that require the use of personal protective equipment. Where such hazards are identified, the company will:

- Select appropriate types of personal protective equipment to protect the employees from the hazards identified in the hazard assessment.
- Communicate selection decisions to each affected employee.
- Select personal protective equipment that properly fits each affected employee.
- Require each affected employee to wear the personal protective equipment selected.

The completed assessments are maintained by (insert job title of responsible person).

PPE Training

Each employee who is required to use personal protective equipment will be trained on:

- What personal protective equipment is necessary.
- When the personal protective equipment is necessary.
- How to properly don, doff, adjust and wear the personal protective equipment.
- The limitations of the personal protective equipment.
- The proper care, maintenance, useful life and disposal of the personal protective equipment.

As part of the training, each employee will demonstrate an understanding of the items specified above and the ability to use the equipment properly before being allowed to perform work requiring the use of personal protective equipment.

Retraining will be provided whenever the required PPE changes, or when the employee demonstrates lack of knowledge concerning use of the equipment.

Personal Protective Equipment Hazard Assessment		
Location:	**Department:**	**Date/Revision Date:**
Job or Task	**Potential Hazards**	**PPE Required**

*(**Note:** This program may be mandatory for your company. Please reference the scope and application of the referenced OSHA standard. This is an example program and may be modified to meet the company's needs. The standard should be referenced to ensure that all requirements are being met.)*

Respiratory Protection Program (Ref. 29 CFR 1910.134)

General

In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays or vapors, the primary objective will be to prevent atmospheric contamination. This will be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators will be used.

Responsibilities

All employees must follow the requirements of the respiratory protection program.

Management

- Implement the requirements of this program.
- Provide a selection of respirators as required.
- Enforce all provisions of this program.
- Appoint an individual to administer the respiratory protection program.

Program Administrator

- Review sanitation/storage procedures.
- Ensure respirators are properly stored, inspected and maintained.
- Monitor compliance for this program.
- Provide training for affected employees.
- Review compliance and ensure monthly inspection of all respirators.
- Provide respirator fit testing.

Designated Occupational Health Care Provider (HCP)

- Conduct medical aspects of program.

Program Administrator

(*Insert job title*) will be designated as the program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

Voluntary Use of Respirators

OSHA requires that the voluntary use of respirators (i.e., when respirators are not required by the company) be controlled as strictly as if their use were required. So any employee wearing a respirator voluntarily will fall under this respiratory protection program, be issued a copy of Appendix D of 29 CFR 1910.134, and fill out a medical

questionnaire (Appendix C of 29 CFR 1910.134) and have it evaluated by the designated HCP. Training will be conducted on the proper storage, cleaning and maintenance of the respirator. All steps will be taken to ensure that the respirator does not pose a health risk to the person donning it.

Exception: Employees whose only use of respirators involves the voluntary use of filtering (nonsealing) facepieces (dust masks, with one or two straps) do not fall under this program.

Program Evaluation

Evaluations of the workplace are necessary to ensure that the written respiratory protection program is being properly implemented. This includes consulting with employees to ensure that they are using the respirators properly. Evaluations will be conducted as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.

Program evaluation will include discussions with employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment will be corrected. Factors to be assessed include, but are not limited to:

- Respirator fit (including the ability to use the respirator without interfering with effective workplace performance);
- Appropriate respirator selection for the hazards to which the employee is exposed;
- Proper respirator use under the workplace conditions the employee encounters; and
- Proper respirator maintenance.

Recordkeeping

The company will retain written information regarding medical evaluations, fit testing, and the respirator program. This information will facilitate employee involvement in the respirator program, assist the company in auditing the adequacy of the program, and provide a record for compliance determinations by OSHA.

Training and Information

Effective training for employees who are required to use respirators is essential. The training must be comprehensive, understandable, and recur annually, and more often if necessary. Training will be provided prior to requiring the employee to use a respirator in the workplace. The training will ensure that each employee can demonstrate knowledge of at least the following:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
- Limitations and capabilities of the respirator.
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- How to inspect, put on and remove, use, and check the seals of the respirator.
- What the procedures are for maintenance and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- The general requirements of this program.

Retraining will be conducted annually and when:

- Changes in the workplace or the type of respirator render previous training obsolete.
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill.
- Other situation arises in which retraining appears necessary to ensure safe respirator use.

Training will be conducted by instructors who have adequate knowledge of OSHA training requirements. Training is divided into the following sections:

Classroom Instruction

1. Overview of the company respiratory protection program and OSHA Standard.
2. Respiratory protection safety procedures.
3. Respirator selection.
4. Respirator operation and use.
5. Why the respirator is necessary.
6. How improper fit, usage or maintenance can compromise the protective effect.
7. Limitations and capabilities of the respirator.
8. How to use the respirator effectively in emergency situations, including respirator malfunctions.
9. How to inspect, put on and remove, use, and check the seals of the respirator.
10. What the procedures are for maintenance and storage of the respirator.
11. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
12. Change out schedule and procedure for air-purifying respirators (APR).

Fit Testing

- For each type and model of respirator used.

Hands-on Respirator Training

1. Respirator inspection.
2. Respirator cleaning and sanitizing.
3. Recordkeeping.
4. Respirator storage.
5. Respirator fit check.
6. Emergencies.

Basic Respiratory Protection Safety Procedures

- Only authorized and trained employees may use respirators. Those employees may use only the respirator that they have been trained on and properly fitted to use.
- Only physically qualified employees may be trained and authorized to use respirators. A preauthorization and annual certification by a qualified physician will be required and maintained. Any changes in an employee's health or physical characteristics will be reported to the program administrator and will be evaluated by a qualified physician.
- Only the proper prescribed respirator or SCBA may be used for the job or work environment. Air-purifying respirators may be worn in work environments when oxygen levels are 19.5 percent to 23.5 percent and when the appropriate cartridge (as determined by the manufacturer and approved by NIOSH) for the known hazardous substance is used. SCBAs will be worn in oxygen deficient and oxygen rich environments (below 19.5 percent or above 23.5 percent oxygen).
- Employees working in environments where a sudden release of a hazardous substance is likely will wear an appropriate respirator for that hazardous substance. (Example: Employees working in an ammonia compressor room will have an ammonia APR respirator on their person.)
- Only SCBAs will be used in oxygen deficient environments, environments with an unknown hazardous substance or unknown quantity of a known hazardous substance, or any environment that is determined "immediately dangerous to life or health" (IDLH).

- Employees with respirators loaned on permanent checkout will be responsible for the sanitation, proper storage and security. Respirators damaged by normal wear will be repaired or replaced by the company when returned.
- The last employee using a respirator or SCBA that is available for general use will be responsible for proper storage and sanitation. Monthly and after each use, all respirators will be inspected with documentation to ensure its availability for use.
- All respirators will be located in a clean, convenient and sanitary location.
- In the event that employees must enter a confined space; work in environments with hazardous substances that would be dangerous to life or health should an RPE (respiratory protection equipment) fail (a SCBA is required in this environment); and/or conduct a HazMat entry, a "buddy system" detail will be used with a "safety watchman" with constant voice, visual or signal line communication. Employees will follow the established emergency response program and/or confined space entry program when applicable.
- Management will establish and maintain surveillance of jobs and work place conditions and degree of employee exposure or stress to maintain the proper procedures and to provide the necessary RPE.
- Management will establish and maintain safe operation procedures for the safe use of RPE with strict enforcement and disciplinary action for failure to follow all general and specific safety rules. Standard operation procedures for general RPE use will be maintained as an attachment to the respiratory protection program and standard operation procedures for RPE use under emergency response situations will be maintained as an attachment to the emergency response program.

Selection of Respirators

The company has evaluated the respiratory hazards in each workplace, has identified relevant workplace and user factors, and has based respirator selection on these factors. Also included are estimates of employee exposures to respiratory hazards and an identification of the contaminant's chemical state and physical form. This selection has included appropriate protective respirators for use in IDLH atmospheres and has limited the selection and use of air-purifying respirators. All selected respirators are NIOSH certified.

(List company air contaminants, estimates of exposure and respirators to be used with those contaminants in this section.)

Filter Classifications—These classifications are marked on the filter or filter package

N-Series: Not Oil Resistant

- Approved for non-oil particulate contaminants.
- Examples: dust, fumes, mists not containing oil.

R-Series: Oil Resistant

- Approved for all particulate contaminants, including those containing oil.
- Examples: dusts, mists, fumes.
- Time restriction of 8 hours when oils are present.

P-Series: Oil Proof

- Approved for all particulate contaminants including those containing oil.
- Examples: dust, fumes, mists.
- See manufacturer's time use restrictions on packaging.

Respirators for IDLH Atmospheres.

The following respirators will be used in IDLH atmospheres:

- A full facepiece pressure demand SCBA certified by NIOSH for a minimum service life of 30 minutes, or
- A combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

- Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

Respirators for Atmospheres That Are Not IDLH

- The respirators selected must be adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements under routine and reasonably foreseeable emergency situations. The respirator selected must be appropriate for the chemical state and physical form of the contaminant.

Identification of Filters and Cartridges

All filters and cartridges will be labeled and color-coded with the NIOSH approval label. The user will ensure that the label is not removed and remains legible. A change out schedule for filters and cartridge has been developed to ensure these elements of the respirators remain effective.

Respirator Filter and Canister Replacement

An important part of the respiratory protection program includes identifying the useful life of cartridges and filters used on air-purifying respirators. Each filter and cartridge must be equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant.

If there is no ESLI appropriate for the conditions, a change schedule for canisters and cartridges based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life will be implemented.

Filter and Cartridge Change Schedule

Stock of spare filers and cartridges will be maintained to allow immediate change when required or desired by the employee.

Cartridges will be changed based on the most limiting factor below:

- Prior to expiration date.
- Manufactures recommendations for the specific use and environment.
- After each use.
- When requested by employee.
- When contaminant odor is detected.
- When restriction to air flow has occurred as evidenced by increase effort by user to breathe normally.

Cartridges will remain in their original sealed packages until needed for immediate use.

Filters will be changed on the most limiting factor below:

- Prior to expiration date.
- Manufacturer’s recommendations for the specific use and environment.
- When requested by employee.
- When contaminant odor is detected.
- When restriction to air flow has occurred as evidenced by increase effort by user to breathe normally.
- When discoloring of the filter media is evident.

Filters will remain in their original sealed package until needed for immediate use.

Respiratory Protection Schedule by Job and Working Condition

The company maintains a respiratory protection schedule by job and working condition. This schedule is provided to each authorized and trained employee. The schedule provides the following information:

- Job/working conditions
- Work location
- Hazards present
- Type of respirator or SCBA required
- Type of filter/canister required
- Location of respirator or SCBA
- Filter/cartridge change out schedule

The schedule will be reviewed and updated at least annually and whenever any changes are made in the work environments, machinery, equipment or processes or if respirator different respirator models are introduced or existing models are removed.

Permanent respirator schedule assignments are:

(*List as appropriate*)

Physical and Medical Qualifications

Records of medical evaluations must be retained and made available in accordance with 29 CFR 1910.1020.

Medical Evaluation Required

Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. The company provides a medical evaluation through an HCP to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace.

Medical Evaluation Procedures

The employee will be provided a medical questionnaire (29 CFR 1910.134, Appendix C), which is sent confidentially to the designated HCP for review, and when determined by the HCP, will receive a medical examination.

Follow-Up Medical Examination

The company will ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions in Part B of the questionnaire or whose initial medical examination demonstrates the need for a follow-up medical examination. The follow-up medical examination will include any medical tests, consultations or diagnostic procedures that the physician deems necessary to make a final determination.

Administration of the Medical Questionnaire And Examinations

The medical questionnaire and examinations will be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire will be administered in a manner that ensures that the employee understands its content. The company will provide the employee with an opportunity to discuss the questionnaire and examination results with the physician.

Supplemental Information for the Physician

The following information must be provided to the physician before the physician makes a recommendation concerning an employee's ability to use a respirator.

- The type and weight of the respirator to be used by the employee.
- The duration and frequency of respirator use (including use for rescue and escape).

- The expected physical work effort.
- Additional protective clothing and equipment to be worn.
- Temperature and humidity extremes that may be encountered.
- Any supplemental information provided previously to the physician regarding an employee need not be provided for a subsequent medical evaluation if the information and the physician remain the same.

The company has provided the physician with a copy of the written respiratory protection program and a copy of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Medical Determination

In determining the employee's ability to use a respirator, the company will obtain a written recommendation regarding the employee's ability to use the respirator from the physician. The recommendation will provide only the following information:

- Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.
- The need, if any, for follow-up medical evaluations.
- A statement that the physician has provided the employee with a copy of the physician's written recommendation.
- If the respirator is a negative pressure respirator and the physician finds a medical condition that may place the employee's health at increased risk if the respirator is used, the company will provide an APR if the physician's medical evaluation finds that the employee can use such a respirator. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the company is no longer required to provide an APR.

Additional Medical Evaluations

At a minimum, the company will provide additional medical evaluations that comply with the requirements of this section if:

- An employee reports medical signs or symptoms that are related to ability to use a respirator.
- A physician, supervisor or the respirator program administrator informs the company that an employee needs to be re-evaluated.
- Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation.
- A change occurs in workplace conditions (physical work effort, protective clothing, temperature, etc.) that may result in a substantial increase in the physiological burden placed on an employee.

Respirator Fit Testing

Before an employee is required to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style and size of respirator that will be used. The company will ensure that an employee using a tight-fitting facepiece respirator is fit tested prior to initial use of the respirator, whenever a different respirator facepiece (size, style, model or make) is used, and at least annually thereafter.

The company has established a record of the qualitative and quantitative fit tests administered to employees including:

- The name or identification of the employee tested.
- Type of fit test performed.
- Specific make, model, style and size of respirator tested.
- Date of test.
- The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs.

Additional fit tests will be conducted whenever the employee reports or the company, physician, supervisor or program administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery or an obvious change in body weight.

If after passing a QLFT or QNFT, the employee notifies the company, program administrator, supervisor or physician that the fit of the respirator is unacceptable, the employee will be given a reasonable opportunity to select a different respirator facepiece and to be retested.

Types of Fit Tests

The fit test shall be administered using an OSHA-accepted QLFT or QNFT protocol. The OSHA-accepted QLFT and QNFT protocols and procedures are contained in Appendix A of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

- **QLFT** may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.
- If the fit factor, as determined through an OSHA-accepted QNFT protocol, is equal to or greater than 100 for tight-fitting half facepieces, or equal to or greater than 500 for tight-fitting full facepieces, the QNFT has been passed with that respirator.
- **Fit testing of tight-fitting** atmosphere-supplying respirators and tight-fitting powered air-purifying respirators will be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.
- **Qualitative fit testing** of these respirators will be accomplished by temporarily converting the respirator user's actual facepiece into a negative pressure respirator with appropriate filters or by using an identical negative pressure air-purifying respirator facepiece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator facepiece.
- **Quantitative fit testing** of these respirators will be accomplished by modifying the facepiece to allow sampling inside the facepiece in the breathing zone of the user, midway between the nose and mouth. This requirement will be accomplished by installing a permanent sampling probe onto a surrogate facepiece or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the facepiece.
- Any modifications to the respirator facepiece for fit testing will be completely removed and the facepiece restored to NIOSH approved configuration before that facepiece can be used in the workplace.

Fit test records will be retained for respirator users until the next fit test is administered. Written materials required to be retained will be made available upon request to affected employees.

Respirator Operation and Use

Respirators will only be used following the respiratory protection safety procedures established in this program. The operations and use manuals for each type of respirator will be maintained by the program administrator and be available to all qualified users.

Surveillance by the direct supervisor will be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, the company will re-evaluate the continued effectiveness of the respirator.

For continued protection of respirator users, the following general use rules apply:

- Users will not remove respirators while in a hazardous environment.
- Respirators are to be stored in sealed containers out of harmful atmospheres.
- Store respirators away from heat and moisture.
- Store respirators such that the sealing area does not become distorted or warped.
- Store respirator such that the facepiece is protected.

Facepiece Seal Protection

The company does not permit respirators with tight-fitting facepieces to be worn by employees who have:

- Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function.
- Any condition that interferes with the face-to-facepiece seal or valve function.

If an employee wears corrective glasses or goggles or other personal protective equipment, the company will ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user.

Continuing Effectiveness of Respirators

The company will ensure that employees leave the respirator use area:

- To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use.
- If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece.
- To replace the respirator or the filter, cartridge or canister elements.

If the employee detects vapor or gas breakthrough, changes in breathing resistance or leakage of the facepiece, the company will replace or repair the respirator before allowing the employee to return to the work area.

Procedures for IDLH atmospheres

For all IDLH atmospheres, the company will ensure that:

- One employee or, when needed, more than one employee is located outside the IDLH atmosphere.
- Visual, voice or signal line communication is maintained between the employees in the IDLH atmosphere and the employees located outside the IDLH atmosphere.
- The employees located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue.
- The employer or designee is notified before the employees located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue.
- The employer or designee authorized to do so by the company, once notified, provides necessary assistance appropriate to the situation.

Employees located outside the IDLH atmospheres will be equipped with:

- Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either
- Appropriate retrieval equipment for removing the employees who enters these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employees and would not increase the overall risk resulting from entry; or
- Equivalent means for rescue where retrieval equipment is not required.

Cleaning and Disinfecting

The company will provide each respirator user with a respirator that is clean, sanitary and in good working order. The company will ensure that respirators are cleaned and disinfected using the standard operating procedure for cleaning and disinfecting.

The respirators will be cleaned and disinfected when:

- Respirators issued for the exclusive use of an employee will be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.
- Respirators issued to more than one employee will be cleaned and disinfected before being worn by different individuals.

- Respirators maintained for emergency use will be cleaned and disinfected after each use.
- Respirators used in fit testing and training will be cleaned and disinfected after each use.

Cleaning and storage of respirators assigned to specific employees is the responsibility of that employee.

Respirator Inspection

All respirators/SCBAs will be inspected. Should any defects be noted, the respirator/SCBA will be taken to the program administrator. Damaged respirators will be repaired or replaced. The inspection of respirators will be the responsibility of the employee.

Respirators will be inspected as follows:

- All respirators used in routine situations will be inspected before each use and during cleaning.
- All respirators maintained for use in emergency situations will be inspected at least monthly and in accordance with the manufacturer's recommendations, and will be checked for proper function before and after each use.
- Emergency escape-only respirators will be inspected before being carried into the workplace for use.

Respirator inspections include the following:

- A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters.
- Check of elastomeric parts for pliability and signs of deterioration.
- Self-contained breathing apparatus will be inspected monthly. Air and oxygen cylinders will be maintained in a fully charged state and will be recharged when the pressure falls to 90 percent of the manufacturer's recommended pressure level. The company will determine that the regulator and warning devices function properly

For emergency use respirators, the additional requirements apply:

- Certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator.
- Provide this information on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or electronic files. This information will be maintained until replaced following a subsequent certification.

Respirator Storage

Respirators are to be stored as follows:

- All respirators will be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture and damaging chemicals, and they will be packed or stored to prevent deformation of the facepiece and exhalation valve.
- Emergency respirators will be:
  - Kept accessible to the work area.
  - Stored in compartments or in covers that are clearly marked as containing emergency respirators.
  - Stored in accordance with any applicable manufacturer's instructions.

Repair of Respirators

Respirators that fail an inspection or are otherwise found to be defective will be removed from service to be discarded, repaired or adjusted in accordance with the following procedures:

- Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and will use only the respirator manufacturer's NIOSH-approved parts designed for the respirator.
- Repairs shall be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.

- Reducing and admission valves, regulators, and alarms will be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

Breathing Air Quality and Use

The company will ensure that compressed air, compressed oxygen, liquid air and liquid oxygen used for respiration accords with the following specifications:

- Compressed and liquid oxygen must meet the United States Pharmacopoeia requirements for medical or breathing oxygen.
- Compressed breathing air must meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:
  - Oxygen content (v/v) of 19.5–23.5 percent.
  - Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less.
  - Carbon monoxide (CO) content of 10 ppm or less.
  - Carbon dioxide content of 1,000 ppm or less.
  - Lack of noticeable odor.
- Compressed oxygen will not be used in atmosphere-supplying respirators that have previously used compressed air.
- Oxygen concentrations greater than 23.5 percent are used only in equipment designed for oxygen service or distribution.
- Cylinders used to supply breathing air to respirators meet the following requirements:
  - Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178).
  - Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air.
  - Moisture content in breathing air cylinders does not exceed a dew point of −50 degrees F (−45.6 degrees C) at 1 atmosphere pressure.
  - Breathing air couplings are incompatible with outlets for nonrespirable worksite air or other gas systems. No asphyxiating substance will be introduced into breathing air lines.
  - Breathing gas containers will be marked in accordance with the NIOSH respirator certification standard, 42 CFR Part 84.

Appendix C to Sec. 1910.134:
OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Can you read (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date:_____
2. Your name:_____
3. Your age (to nearest year):_____
4. Sex (circle one): Male/Female
5. Your height: _____ ft. _____ in.
6. Your weight: _____ lbs.
7. Your job title:_____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____
9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No
11. Check the type of respirator you will use (you can check more than one category):
    a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
    b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).
12. Have you worn a respirator (circle one): Yes/No

If "yes," what type(s):_____

_____

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month: Yes/No
2. Have you *ever had* any of the following conditions?
    a. Seizures: Yes/No
    b. Diabetes (sugar disease): Yes/No
    c. Allergic reactions that interfere with your breathing: Yes/No
    d. Claustrophobia (fear of closed-in places): Yes/No
    e. Trouble smelling odors: Yes/No
3. Have you *ever had* any of the following pulmonary or lung problems?
    a. Asbestosis: Yes/No
    b. Asthma: Yes/No

c. Chronic bronchitis: Yes/No
d. Emphysema: Yes/No
e. Pneumonia: Yes/No
f. Tuberculosis: Yes/No
g. Silicosis: Yes/No
h. Pneumothorax (collapsed lung): Yes/No
i. Lung cancer: Yes/No
j. Broken ribs: Yes/No
k. Any chest injuries or surgeries: Yes/No
l. Any other lung problem that you've been told about: Yes/No

4. Do you *currently* have any of the following symptoms of pulmonary or lung illness?
   a. Shortness of breath: Yes/No
   b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
   c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
   d. Have to stop for breath when walking at your own pace on level ground: Yes/No
   e. Shortness of breath when washing or dressing yourself: Yes/No
   f. Shortness of breath that interferes with your job: Yes/No
   g. Coughing that produces phlegm (thick sputum): Yes/No
   h. Coughing that wakes you early in the morning: Yes/No
   i. Coughing that occurs mostly when you are lying down: Yes/No
   j. Coughing up blood in the last month: Yes/No
   k. Wheezing: Yes/No
   l. Wheezing that interferes with your job: Yes/No
   m. Chest pain when you breathe deeply: Yes/No
   n. Any other symptoms that you think may be related to lung problems: Yes/No

5. Have you *ever had* any of the following cardiovascular or heart problems?
   a. Heart attack: Yes/No
   b. Stroke: Yes/No
   c. Angina: Yes/No
   d. Heart failure: Yes/No
   e. Swelling in your legs or feet (not caused by walking): Yes/No
   f. Heart arrhythmia (heart beating irregularly): Yes/No
   g. High blood pressure: Yes/No
   h. Any other heart problem that you've been told about: Yes/No

6. Have you *ever had* any of the following cardiovascular or heart symptoms?
   a. Frequent pain or tightness in your chest: Yes/No
   b. Pain or tightness in your chest during physical activity: Yes/No
   c. Pain or tightness in your chest that interferes with your job: Yes/No
   d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
   e. Heartburn or indigestion that is not related to eating: Yes/No
   f. Any other symptoms that you think may be related to heart or circulation problems: Yes/No

7. Do you *currently* take medication for any of the following problems?
   a. Breathing or lung problems: Yes/No
   b. Heart trouble: Yes/No
   c. Blood pressure: Yes/No
   d. Seizures: Yes/No

8. If you've used a respirator, have you *ever had* any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)
   a. Eye irritation: Yes/No
   b. Skin allergies or rashes: Yes/No
   c. Anxiety: Yes/No
   d. General weakness or fatigue: Yes/No
   e. Any other problem that interferes with your use of a respirator: Yes/No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently): Yes/No

11. Do you *currently* have any of the following vision problems?
    a. Wear contact lenses: Yes/No
    b. Wear glasses: Yes/No
    c. Color blind: Yes/No
    d. Any other eye or vision problem: Yes/No

12. Have you *ever had* an injury to your ears, including a broken eardrum: Yes/No

13. Do you *currently* have any of the following hearing problems?
    a. Difficulty hearing: Yes/No
    b. Wear a hearing aid: Yes/No
    c. Any other hearing or ear problem: Yes/No

14. Have you *ever had* a back injury: Yes/No

15. Do you *currently* have any of the following musculoskeletal problems?
    a. Weakness in any of your arms, hands, legs, or feet: Yes/No
    b. Back pain: Yes/No
    c. Difficulty fully moving your arms and legs: Yes/No
    d. Pain or stiffness when you lean forward or backward at the waist: Yes/No
    e. Difficulty fully moving your head up or down: Yes/No
    f. Difficulty fully moving your head side to side: Yes/No
    g. Difficulty bending at your knees: Yes/No
    h. Difficulty squatting to the ground: Yes/No
    i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
    j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

   If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

   If "yes," name the chemicals if you know them_____

   _____

   _____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:
    a. Asbestos: Yes/No
    b. Silica (e.g., in sandblasting): Yes/No
    c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No
    d. Beryllium: Yes/No
    e. Aluminum: Yes/No
    f. Coal (for example, mining): Yes/No
    g. Iron: Yes/No
    h. Tin: Yes/No

i. Dusty environments: Yes/No
j. Any other hazardous exposures: Yes/No

If "yes," describe these exposures:_____
_____
_____

4. List any second jobs or side businesses you have: _____
_____

5. List your previous occupations: _____
_____

6. List your current and previous hobbies: _____
_____

7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If "yes," name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?
a. HEPA Filters: Yes/No
b. Canisters (for example, gas masks): Yes/No
c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:
a. Escape only (no rescue): Yes/No
b. Emergency rescue only: Yes/No
c. Less than 5 hours per week: Yes/No
d. Less than 2 hours per day: Yes/No
e. 2 to 4 hours per day: Yes/No
f. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

a. Light (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift:_____hrs._____mins.

Examples of a light work effort are ***sitting*** while writing, typing, drafting, or performing light assembly work; or ***standing*** while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift:_____hrs._____mins.

Examples of moderate work effort are ***sitting*** while nailing or filing; ***driving*** a truck or bus in urban traffic; ***standing*** while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; ***walking*** on a level surface about 2 mph or down a 5-degree grade about 3 mph; or ***pushing*** a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. Heavy (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift:_____hrs._____mins.

Examples of heavy work are ***lifting*** a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; ***shoveling***; ***standing*** while bricklaying or chipping castings; ***walking*** up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

    If "yes," describe this protective clothing and/or equipment: _____

    _____

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

    _____

    _____

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

    _____

    _____

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

    Name of the first toxic substance:_____

    Estimated maximum exposure level per shift:_____

    Duration of exposure per shift:_____

    Name of the second toxic substance:_____

    Estimated maximum exposure level per shift:_____

    Duration of exposure per shift:_____

    Name of the third toxic substance:_____

    Estimated maximum exposure level per shift:_____

    Duration of exposure per shift:_____

    The name of any other toxic substances that you'll be exposed to while using your respirator:

    _____

    _____

    _____

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

    _____

Appendix D to Sec. 1910.134 (Mandatory)

Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else’s respirator.

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. The standard should be referenced to ensure that all requirements are being met.)*

Scaffolding Policy
(Ref. 29 CFR 1910.21–30 and 29 CFR 1926, Subpart L)

A scaffold is defined as an elevated, temporary work platform. There are three basic types of scaffolds:

- Supported scaffolds, which consist of one or more platforms supported by rigid, load-bearing members, such as poles, legs, frames or outriggers.
- Suspended scaffolds, which are one or more platforms suspended by ropes or other nonrigid overhead support.
- Other scaffolds, principally manlifts, personnel hoists, etc., which are sometimes thought of as vehicles or machinery, but can be regarded as another type of supported scaffold.

Common Hazards Associated With All Scaffolds

- Falls from elevation, due to lack of fall protection.
- Collapse of the scaffold, caused by instability or overloading.
- Being struck by falling tools, work materials or debris.
- Electrocution, principally due to proximity of the scaffold to overhead power lines.

Safe Work Practices

- Scaffolds should be set on sound footing.
- Damaged parts that affect the strength of the scaffold are taken out of service.
- Scaffolds are not altered.
- All scaffolds should be fully planked.
- Scaffolds are not moved horizontally while workers are on them unless they are designed to be mobile and workers have been trained in the proper procedures.
- Employees are not permitted to work on scaffolds when covered with snow, ice or other slippery materials.
- Scaffolds are not erected or moved within 10 feet of power lines.
- Employees are not permitted to work on scaffolds in bad weather or high winds unless a competent person has determined that it is safe to do so.
- Ladders, boxes, barrels, buckets or other makeshift platforms are not used to raise work height.
- Extra material is not allowed to build up on scaffold platforms.
- Scaffolds should not be loaded with more weight than they were designed to support.

Requirements for Designing and Constructing Scaffolds

Scaffolds must be designed by a qualified person and be constructed and loaded in accordance with that design. OSHA defines a qualified person as one who:

- Possesses a recognized degree, certificate or professional standing.
- Has extensive knowledge, training and experience.
- Can solve or resolve problems related to the work or the project.

A qualified person must do adequate preplanning to assure the safe erection and use of the scaffold.

Preplanning includes:

- Determining the type of scaffold necessary for the job.
- Determining the maximum load of the scaffold.
- Ensuring a good foundation.
- Avoiding electrical hazards.

Where workers on a construction site are exposed to vertical drops of 6 feet or more, OSHA requires that employers provide fall protection in one of three ways before work begins:

- Placing guardrails around the hazard area.
- Deploying safety nets.
- Providing personal fall arrest systems for each employee.

Many times the nature and location of the work will dictate the form that fall protection takes. If the company chooses to use a guardrail system, it must comply with the following provisions:

- Top edge height of toprails, or equivalent guardrail system members, must be between 39 and 45 inches above the walking/working level, except when conditions warrant otherwise and all other criteria are met (e.g., when employees are using stilts, the top edge height of the toprail must be increased by an amount equal the height of the stilts).
- Midrails, screens, mesh, intermediate vertical members or equivalent intermediate structures must be installed between the top edge and the walking/working surface when there is no wall or other structure at least 21 inches high.
  - Midrails must be midway between the top edge of the guardrail system and the walking/working level.
  - Screens and mesh must extend from the toprail to the walking/working level, and along the entire opening between rail supports.
  - Intermediate members (such as balusters) between posts must be no more than 19 inches apart.
  - Other structural members (such as additional midrails or architectural panels) must be installed so as to leave no openings wider than 19 inches.
- Guardrail systems must be capable of withstanding at least 200 pounds of force applied within 2 inches of the top edge, in any direction and at any point along the edge, and without causing the top edge of the guardrail to deflect downward to a height less than 39 inches above the walking/working level.
- Midrails, screens, mesh and other intermediate members must be capable of withstanding at least 150 pounds of force applied in any direction at any point along the midrail or other member.
- Guardrail systems must not have rough or jagged surfaces that would cause punctures, lacerations or snagged clothing.
- Toprails and midrails must not cause a projection hazard by overhanging the terminal posts.

*(**Note:** The following program is an example of a written program and based on the referenced standard. The standard does not require a written program, but as a **best practice**, it has been put into writing in this manual. Please modify or delete content to these policies as deemed necessary. The standard should be referenced to ensure that all requirements are being met.)*

Silica Policy
(Ref. 29 CFR 1910.1000)

Whenever possible, we will replace crystalline silica materials with safer substitutes. Other venues to minimize exposure include providing engineering or administrative controls, where feasible, such as local exhaust ventilation and blasting cabinets.

Where necessary to reduce exposure below the permissible exposure level (PEL), employees will use protective equipment or other protective measures.

Safe Work Practices

- Know which work operations and work areas can lead to silica exposure.
- Where possible, use all available work practices to control dust exposure, such as water sprays.
- Respirators will be used in work areas requiring the use of a respirator.
- Appropriate PPE will be worn to include disposable or washable work clothes.
- Employees will vacuum the dust from their clothes, or change into clean clothing before leaving the worksite.
- No eating, drinking, smoking or applying cosmetics in areas where crystalline silica dust is present.
- Wash your hands and face outside of dusty areas before performing any of these activities.

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Spray Finishing Policy
(Ref. 29 CFR 1910.107)

All employees that work in the spray finishing area should follow the work practices outlined below.

Safe Work Practices

- Equipment in the immediate work area should not produce sparks or flames.
- Heating equipment should not be located in spray booths.
- Pressure gauge marked to indicate normal airflow and indicate when filters need replacement.
- Ensure fire sprinklers are functional in the booth and in the exhaust duct for spray operations.
- Ensure spray booth area is separated from other operations by at least 3 feet.
- Chemicals kept near the spray booth should be limited to the amount needed for one shift.
- Employees working at spray operations should stay upwind of the object being sprayed.
  - If downwind, the employee must wear an appropriate respirator.
- Review MSDS for each chemical being used before initial use.
- Maintain good housekeeping practices in work area at all times.
- Do not allow combustible residue to build up on the interior of the spray booth—clean walls and floors regularly.
- Rags or debris wet with flammable liquid should be disposed of in a covered metal trash container.
  - Trash containers should be emptied to an outdoor location at least once a day.
- When transferring flammable or combustible liquid from one container to another, ensure that they are electrically bonded between the two containers.
- Ensure that the spray equipment that is under air pressure has a visible pressure gauge and a relief valve.
- Ensure that a portable fire extinguisher is located near the spray area and is in serviceable condition.
- No smoking is allowed in the spray areas or paint storage rooms.
- No eating or drinking is in spray areas or paint storage rooms.
- Employees should use appropriate PPE for work being conducted.

*(**Note:** The following topic is a **best practice**. Please modify or delete content to these policies as deemed necessary.)*

Thermal Exposures Policy
(Ref. OSHA Directive TED 01-00-015)

Cold Stress—Safe Work Practices

- Recognize the environmental and workplace conditions that lead to potential cold-induced illnesses and injuries.
- Watch for signs and symptoms of cold-induced illnesses/injuries.
- Select proper clothing for cold, wet and windy conditions. Layer clothing to adjust to changing environmental temperatures. Wear a hat and gloves, in addition to underwear that will keep water away from the skin (polypropylene).
- Take frequent short breaks in warm dry shelters to allow the body to warm up.
- Perform work during the warmest part of the day.
- Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
- Use the buddy system (work in pairs).
- Drink warm, sweet beverages (sugar water, sports-type drinks). Avoid drinks with caffeine (coffee, tea or hot chocolate) or alcohol.
- Eat warm, high-calorie foods like hot pasta dishes.

Responding to Frost Bite:

- Move the person to a warm dry area. Don't leave the person alone.
- Remove any wet or tight clothing that may cut off blood flow to the affected area.
- DO NOT rub the affected area, because rubbing causes damage to the skin and tissue.
- Gently place the affected area in a warm (105°F) water bath and monitor the water temperature to slowly warm the tissue. Don't pour warm water directly on the affected area because it will warm the tissue too fast causing tissue damage. Warming takes about 25–40 minutes.
- After the affected area has been warmed, it may become puffy and blister. The affected area may have a burning feeling or numbness. When normal feeling, movement, and skin color have returned, the affected area should be dried and wrapped to keep it warm. Note: If there is a chance the affected area may get cold again, do not warm the skin. If the skin is warmed and then becomes cold again, it will cause severe tissue damage. Seek medical attention as soon as possible.

Responding to Hypothermia:

- Call for emergency help (i.e., ambulance or call 911).
- Move the person to a warm, dry area. Don't leave the person alone. Remove any wet clothing and replace with warm, dry clothing or wrap the person in blankets.
- Have the person drink warm, sweet drinks (sugar water or sports-type drinks) if they are alert. Avoid drinks with caffeine (coffee, tea or hot chocolate) or alcohol.
- Have the person move his or her arms and legs to create muscle heat. If this is impossible, place warm bottles or hot packs in the armpits, groin, neck and head areas. DO NOT rub the person's body or place in warm water bath. This may stop the heart.

Heat Stress—Safe Work Practices

- Know signs and symptoms of heat-related illnesses; monitor yourself and co-worker.
- Know the emergency plan for heat-related stress illnesses.

- Gradually acclimate to the heat.
- Block out direct sun or other heat sources.
- Use cooling fans or air-conditioning; rest regularly.
- Drink lots of water; about one cup every 15 minutes.
- Wear lightweight, light colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks and heavy meals.
- Whenever possible, distribute the workload evenly over the day and incorporate work/rest cycles.
- Reduce physical demands during hot weather.
- Do heavier work in cooler times of the day.
- Rotate job functions to minimize overexertion and heat exposure.
- Be aware that certain personal protective equipment can increase the risk of heat-related illness.
- Immediately report any heat-related symptoms to your supervisor.

Heat-Related Illnesses

Heat Stroke is the most serious heat-related health problem. Heat stroke occurs when the body's temperature regulating system fails and body temperature rises to critical levels (greater than 104°F).*This is a medical emergency that may result in death!* The **signs and symptoms** of heat stroke are confusion, loss of consciousness and seizures. Workers experiencing heat stroke have a very high body temperature and may stop sweating. If a worker shows signs of possible heat stroke, ***get medical help immediately,*** **and call 911**.

Until medical help arrives, move the worker to a shady, cool area and remove as much clothing as possible. Wet the worker with cool water and circulate the air to speed cooling. Place cold wet cloths, wet towels or ice all over the body or soak the worker’s clothing with cold water.

Heat Exhaustion is the next most serious heat-related health problem. The **signs and symptoms** of heat exhaustion are headache, nausea, dizziness, weakness, irritability, confusion, thirst, heavy sweating and a body temperature greater than 100.4°F.

Workers with heat exhaustion should be removed from the hot area and given liquids to drink. Remove unnecessary clothing including shoes and socks. Cool the worker with cold compresses to the head, neck, and face or have the worker wash his or her head, face and neck with cold water. Encourage frequent sips of cool water. Workers with signs or symptoms of heat exhaustion should be taken to a clinic or emergency room for medical evaluation and treatment. Make sure that someone stays with the worker until help arrives. If symptoms worsen, **call 911 and get help immediately**.

Heat Cramps are muscle pains usually caused by physical labor in a hot work environment. Heat cramps are caused by the loss of body salts and fluid during sweating. Workers with heat cramps should replace fluid loss by drinking water and/or carbohydrate-electrolyte replacement liquids (e.g., sports drinks) every 15 to 20 minutes.

Heat Rash is the most common problem in hot work environments. Heat rash is caused by sweating and looks like a red cluster of pimples or small blisters. Heat rash usually appears on the neck, upper chest, in the groin, under the breasts and in elbow creases. The best treatment for heat rash is to provide a cooler, less humid work environment. The rash area should be kept dry. Powder may be applied to increase comfort. Ointments and creams should not be used on a heat rash. Anything that makes the skin warm or moist may make the rash worse.

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Walking and Working Surfaces Program (Ref. 29 CFR 1910.21–30)

A. Purpose

Slips, trips and falls constitute the majority of general industry accidents. They cause 15 percent of all accidental deaths and are second only to motor vehicles as a cause of fatalities.

B. Responsibilities

Safety Coordinator

- Conduct routine inspections to ensure all walking and working surfaces are free from slip, trip and fall hazards.
- Conduct training for employees who use ladders, scaffolds or other elevated platforms.
- Conduct training in use and inspection of fall prevention and arrest equipment.
- Ensure proper ladders are used for specific tasks.
- Provide adequate fall prevention and arrest equipment.

Employees

- Maintain work areas free from slip, trip and fall hazards.
- Correct or immediately report slip, trip and fall hazards.
- Use proper ladders for assigned tasks.

C. Hazard Control

Engineering Controls

- Proper construction of elevated locations.
- Use of hand, knee and toe rails where required.
- Proper design of fixed ladders and stairs.
- Adequate lighting in all areas.

Administrative Controls

- Training for all employees who work at elevated location.
- Routine inspections of ladders, stairs, walking and working surfaces.
- Following housekeeping program requirements.
- Immediate cleanup of material spills.

D. General Requirements

Housekeeping

Simple housekeeping methods can prevent slip-trip-fall hazards:

- All work areas, passageways, storerooms and service rooms will be kept clean and orderly and in a sanitary condition.

- The floor of every area will be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage will be maintained and gratings, mats or raised platforms will be provided.
- Every floor, work area and passageway will be kept free from protruding nails, splinters, holes or loose boards.

Aisles and Passageways

- Aisles and passageways will be kept clear and in good repair with no obstruction across or in aisles that could create a hazard.
- Permanent aisles and passageways will be appropriately marked.
- Where mechanical handling equipment is used, aisles will be sufficiently wide. Improper aisle widths coupled with poor housekeeping and vehicle traffic can cause injury to employees, damage the equipment and material, and can limit egress in emergencies.

Floor Loading Protection

Load rating limits will be marked on plates and conspicuously posted. It will be prohibited to place, or cause or permit to be placed, a load greater than that for which such floor or roof is approved on any floor or roof of a building or other structure.

Guarding Floor and Wall Openings

Floor openings and holes, wall openings and holes, and the open sides of platforms may create hazards. People may fall through the openings or over the sides to the level below. Objects such as tools or parts may fall through the holes and strike people or damage machinery on lower levels.

Protection for Floor Openings

Standard railings will be provided on all exposed sides of a stairway opening, except at the stairway entrance. For infrequently used stairways, where traffic across the opening prevents the use of a fixed standard railing, the guard will consist of a hinged floor opening cover of standard strength and construction along with removable standard railings on all exposed sides, except at the stairway entrance.

A "standard railing" consists of toprail, midrail and posts, and will have a vertical height of 42 inches nominal from the upper surface of toprail to floor, platform, runway, or ramp level. Nominal height of midrail is 21 inches. A "standard toeboard" is 4 inches nominal in vertical height, with not more than ¼-inch clearance above floor level.

Floor openings may be covered rather than guarded with rails. When the floor opening cover is removed, a temporary guardrail will be in place or an attendant will be stationed at the opening to warn personnel.

Every floor hole into which people can accidentally walk will be guarded by either:

- A standard railing with toeboard, or
- A floor hole cover of standard strength and construction. While the cover is not in place, the floor hole will be constantly attended by someone or will be protected by a removable standard railing.

Protection of Open-Sided Floors, Platforms and Runways

Every open-sided floor or platform 4 feet or more above adjacent floor or ground level will be guarded by a standard railing on all open sides, except where there is an entrance to a ramp, stairway or fixed ladder. The railing will be provided with a toeboard wherever, beneath the open sides:

- People can pass,
- There is moving machinery, or
- There is equipment with which falling materials could create a hazard.

Every runway will be guarded by a standard railing, or the equivalent, on all sides 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toeboard will also be provided on each exposed side.

Stairway Railings and Guards

Every flight of stairs with four or more risers will have standard stair railings or standard handrails as specified below. Stair width is measured clear of all obstructions except handrails.

- On stairways less than 44 inches wide having both sides enclosed, at least one handrail will be affixed, preferably on the right side descending.
- On stairways less than 44 inches wide with one open side, at least one stair rail will be affixed on the open side.
- On stairways less than 44 inches wide having both sides open, two stair rails will be provided, one for each side.
- On stairways more than 44 inches wide, but less than 88 inches, one handrail will be provided on each enclosed side and one stair rail on each open side.
- On stairways 88 inches or more in width, one handrail will be provided on each enclosed side, one stair rail on each open side, and one intermediate stair rail placed approximately in the middle of the stairs.

A "standard stair railing" (stair rail) will be of construction similar to a standard railing, but the vertical height will be not more than 34 inches nor less than 30 inches from the upper surface of the toprail to the surface of the tread in line with the face of the riser at the forward edge of the tread.

Fixed Industrial Stairs

Fixed industrial stairs will be provided for access to and from places of work where operations necessitate regular travel between levels. Requirements include:

- Fixed industrial stairs will be strong enough to carry five times the normal anticipated live load.
- At the very minimum, any fixed stairway will be able to carry safely a moving concentrated load of 1,000 pounds.
- All fixed stairways will have a minimum width of 22 inches.
- Fixed stairs will be installed at angles to the horizontal of between 30 and 50 degrees.
- Vertical clearance above any stair tread to an overhead obstruction will be at least 7 feet measured from the leading edge of the tread.

Portable Ladders

The chief hazard when using a ladder is falling. A poorly designed, maintained or improperly used ladder may collapse under the load placed upon it and cause the employee to fall.

A ladder is an appliance consisting of two side rails joined at regular intervals by crosspieces on which a person may step to ascend or descend.

The various types of portable ladders include:

- Stepladder—A self-supporting portable ladder, nonadjustable in length, having flat steps and hinged back.
- Single Ladder—A non-self-supporting portable ladder, nonadjustable in length, consisting of but one section. Its size is designed by overall length of the side rail.
- Extension Ladder—A non-self-supporting portable ladder adjustable in length.

Portable Ladder Requirements

- Portable stepladders longer than 20 feet will not be used.
- Stepladders will be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open position.
- Single ladders longer than 30 feet will not be used.
- Extension ladders longer than 60 feet will not be used.
- Ladders will be maintained in good condition at all times.
- Ladders will be inspected frequently and those that have developed defects will be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."

Proper use of ladders is essential in preventing accidents. Even a good ladder can be a serious safety hazard when used by workers in a dangerous way.

Portable Ladder Safety Precautions

- Ladders will be placed with a secure footing, or they will be lashed, or held in position.
- Ladders used to gain access to a roof or other area will extend at least 3 feet above the point of support.
- The foot of a ladder will, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the support).
- The worker will always face the ladder when climbing up or down.
- Short ladders will not be spliced together to make long ladders.
- Ladders will never be used in the horizontal position as scaffolds or work platforms.
- The top of a regular stepladder will not be used as a step.
- Use both hands when climbing or descending ladders.
- Metal ladders will never be used near electrical equipment.

Fixed Ladders

A fixed ladder is a ladder permanently attached to a structure, building or equipment. A point to remember is that fixed ladders, with a length of more than 20 feet to a maximum unbroken length of 30 feet will be equipped with cages or a ladder safety device. A cage is a guard that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder.

Cages will extend a minimum of 42 inches above the top of a landing, unless other acceptable protection is provided.

Cages will extend down the ladder to a point not less than 7 feet and no more than 8 feet above the base of the ladder.

Manually Propelled Mobile Ladder Stands and Scaffolds (Towers)

- All exposed surfaces of mobile ladder stands and scaffolds will be free from sharp edges, burrs or other safety hazards.
- The maximum work height will not exceed four times the minimum base dimension unless outriggers, guys or braces are added to provide stability.
- This standard requires guardrails and toeboards for work levels 10 feet or more above the ground or floor.

Other Working Surfaces

Portable dockboards (bridge plates) will be secured in position, either by being anchored or equipped with devices that will prevent their slipping. Movement of the dockboard during material handling operations has resulted in forklifts overturning, or falling off the dock, often with serious injury or death to the driver and damage to equipment and material.

- Handholds will be provided on portable dockboards to permit safe handling when the dockboard must be repositioned or relocated.
- Portable dockboards will be inspected prior to use.
- When not in use, portable dockboards will be stored in a manner to prevent damage.

Contractors

All outside contractors working in or on the premises will be required to follow the guidelines set forth in this fall protection program. Contractors in the prejob meeting will be informed of these requirements as well as the on-site construction rules that apply.

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Welding, Cutting and Brazing Policy (Ref. 29 CFR 1910.252–254)

Introduction

Welding, cutting and brazing are hazardous activities that pose a unique combination of both safety and health risks to employees.

Hazards and Controls

Health hazards from welding, cutting and brazing operations include exposures to metal fumes and to ultraviolet (UV) radiation. Safety hazards from these operations include burns, eye damage, electrical shock, cuts, and crushed toes and fingers. Many of these can be controlled with proper work practices and personal protective equipment (PPE).

Safe Work Practices

Transporting, Moving and Storing Compressed Gas Cylinders

Valve protection caps will be in place and secured. When cylinders are hoisted, they will be secured on a cradle, slingboard or pallet. They will not be hoisted or transported by means of magnets or choker slings.

Cylinders will be moved by tilting and rolling them on their bottom edges. They will not be intentionally dropped, struck or permitted to strike each other violently.

When cylinders are transported by powered vehicles, they will be secured in a vertical position.

Valve protection caps will not be used for lifting cylinders from one vertical position to another. Bars will not be used under valves or valve protection caps to pry cylinders loose when frozen. Warm, not boiling, water will be used to thaw cylinders loose.

Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators will be removed and valve protection caps put in place before cylinders are moved.

A suitable cylinder truck, chain or other steadying device will be used to keep cylinders from being knocked over while in use.

When work is finished, when cylinders are empty, or when cylinders are moved at any time, the cylinder valve will be closed.

Compressed gas cylinders will be secured in an upright position at all times, if necessary, for short periods of time while cylinders are actually being hoisted or carried.

Oxygen cylinders in storage will be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet (6.1 m) or by a noncombustible barrier at least 5 feet (1.5 m) high having a fire-resistance rating of at least one-half hour.

Inside of buildings, cylinders will be stored in a well-protected, well-ventilated, dry location, at least 20 feet (6.1 m) from highly combustible materials such as oil or excelsior. Cylinders should be stored in definitely assigned places away from elevators, stairs or gangways. Assigned storage places will be located where cylinders will not be knocked over or damaged by passing or falling objects or subject to tampering.

The in-plant handling, storage and use of all compressed gases in cylinders, portable tanks, rail tank cars or motor vehicle cargo tanks will be in accordance with Compressed Gas Association Pamphlet P-1-1965.

Placing Cylinders

Cylinders will be kept far enough away from the actual welding or cutting operation so that sparks, hot slag or flame will not reach them. When this is impractical, fire resistant shields will be provided.

Cylinders will be placed where they cannot become part of an electrical circuit. Electrodes will not be struck against a cylinder to strike an arc.

Fuel gas cylinders will be placed with valve end up whenever they are in use. They will not be placed in a location where they would not be subject to open flame, hot metal or other sources of artificial heat.

Cylinders containing oxygen or acetylene or other fuel gas will not be taken into confined spaces.

Treatment of Cylinders

Cylinders, whether full or empty, will not be used as rollers or supports.

No person other than the gas supplier will attempt to mix gases in a cylinder. No one except the owner of the cylinder or person authorized by the owner will refill a cylinder. No one will use a cylinder's contents for purposes than those intended by the supplier. All cylinders used will meet the Department of Transportation requirements published in 49 CFR Part 178, Subpart C.

Specification for Cylinders.

No damaged or defective cylinder will be used.

Use of Fuel Gas

The employer will thoroughly instruct employees in the safe use of fuel gas, as follows:

- Fuel gas will not be used from cylinders through torches or other devices that are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.
- Before a regulator to a cylinder valve is connected, the valve will be opened slightly and closed immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator.) The person cracking the valve will stand to one side of the outlet, not in front of it. The valve of a fuel gas cylinder will not be cracked where the gas would reach welding work, sparks, flame or other possible sources of ignition.

The cylinder valve will always be opened slowly to prevent damage to the regulator. For quick closing, valves of fuel gas cylinders will not be opened more than 1½ turns. When a special wrench is required, it will be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifolded or coupled cylinders, at least one such wrench will always be available for immediate use. Nothing will be placed on top of a fuel gas cylinder, when in use, that may damage the safety device or interfere with the quick closing of the valve.

Before a regulator is removed from a cylinder valve, the cylinder valve will always be closed and the gas released from the regulator.

If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve will be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder will be discontinued, and it will be properly tagged and removed from the work area. In the event that fuel gas should leak from the cylinder valve, rather than from the valve stem, and the gas cannot be shut off, the cylinder will be properly tagged and removed from the work area. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the work area.

If a leak should develop at a fuse plug or other safety device, the cylinder will be removed from the work area.

Fuel Gas and Oxygen Manifolds

Fuel gas and oxygen manifolds will bear the name of the substance they contain in letters at least 1-inch high, which will be either painted on the manifold or on a sign permanently attached to it. These manifolds will be placed in safe, well-ventilated and accessible locations and not be located within enclosed spaces.

Manifold hose connections, including both ends of the supply hose that lead to the manifold, will be such that the hose cannot be interchanged between fuel gas and oxygen manifolds and supply header connections. Adapters will not be use to permit the interchange of hose. Hose connections will be kept free of grease and oil.

When not in use, manifold and header hose connections will be capped. Nothing will be placed on top of a manifold, when in use, which will damage the manifold or interfere with the quick closing of the valves.

Hose

Fuel gas and oxygen hose will be easily distinguishable from each other. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses will not be interchangeable. A single hose having more than one gas passage will not be used.

When parallel sections of oxygen and fuel gas hose are taped together, not more than 4 inches out of 12 inches will be covered by tape.

All hose in use, carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance that may ignite or enter into combustion, or be in any way harmful to employees, will be inspected at the beginning of each working shift. Defective hose will be removed from service.

Hose that has been subject to flashback or shows evidence of severe wear or damage will be tested to twice the normal pressure to which it is subject, but in no case less than 300 p.s.i. Defective hose, or hose in doubtful condition, will not be used.

Hose couplings will be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.

Boxes used for the storage of gas hose will be ventilated.

Hoses, cables and other equipment will be kept clear of passageways, ladders and stairs.

Torches

Clogged torch tip openings will be cleaned with suitable cleaning wires, drills or other devices designed for such purpose.

Torches in use will be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings and tip connections. Defective torches will not be used.

Torches will be lighted by friction lighters or other approved devices and not by matches or from hot work.

Regulators and Gauges

Oxygen and fuel gas pressure regulators, including their related gauges, will be in proper working order while in use.

Oil and Grease Hazards

Oxygen cylinders and fittings will be kept away from oil or grease. Cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus will be kept free from oil or greasy substances and will not be handled with oily hands or gloves. Oxygen will not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

Arc Welding and Cutting

Manual Electrode Holders

Only manual electrode holders that are specifically designed for arc welding and cutting and are of a capacity capable of safely handling the maximum rated current required by the electrodes will be used.

Welding Cables and Connectors

All arc welding and cutting cables will be of the completely insulated flexible type, capable of handling the maximum current requirements of the work in progress, taking into account the duty cycle under which the arc welder or cutter is working.

Only cable free from repair or splices for a minimum distance of 10 feet from the cable end to which the electrode holder is connected will be used, except that cables with standard insulated connectors or with splices whose insulating quality is equal to that of the cable are permitted.

Cables in need of repair will not be used. When a cable, other than the cable lead referred to above, becomes worn to the extent of exposing bare conductors, the portion thus exposed will be protected by means of rubber and friction tape or other equivalent insulation.

When it becomes necessary to connect or splice lengths of cable one to another, substantial insulated connectors of a capacity at least equivalent to that of the cable will be used. If connections are effected by means of cable lugs, they will be securely fastened together to give good electrical contact, and the exposed metal parts of the lugs will be completely insulated.

Ground Returns and Machine Grounding

A ground return cable will have a safe current-carrying capacity equal to or exceeding the specified maximum output capacity of the arc welding or cutting unit that it services. When a single ground return cable services more than one unit, its safe current-carrying will exceed the total specified maximum output capacities of the all the units that it services.

Pipelines containing gases or flammable liquids or conduits containing electrical circuits will not be used as a ground return.

When a structure or pipeline is employed as a ground return circuit, it will be determined that the required electrical contact exists at all joints. The generation of an arc, sparks or heat at any point will cause rejection of the structures as a ground circuit.

When a structure or pipeline is continuously employed as a ground return circuit, all joints will be bonded, and periodic inspections will be conducted to ensure that no condition of electrolysis or fire hazard exists by virtue of such use.

The frames of all arc welding and cutting machines will be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire that is grounded at the source of the current. Grounding circuits, other than by means of the structure, will be checked to ensure that the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

All ground connections will be inspected to ensure that they are mechanically strong and electrically adequate for the required current.

Operating Instructions

Employers will instruct employees in the safe means of arc welding and cutting as follows:

- When electrode holders are to be left unattended, the electrodes will be removed and the holders will be so placed or protected that they cannot make electrical contact with employees or conducting objects.
- Hot electrode holders will not be dipped in water; to do so may expose the arc welder or cutter to electric shock.

When the arc welder or cutter has occasion to leave the work or to stop work for any appreciable length of time or when the arc welding or cutting machine is to be moved, the power supply switch to the equipment will be opened.

Any faulty or defective equipment will be reported to the supervisor.

A disconnecting means will be provided in the supply circuit for each motor generated arc welder and for each AC transformer and DC rectifier arc welder that is not equipped with a disconnect mounted as an integral part of the welder.

A switch or circuit breaker will be provided by which each resistance welder and its control equipment can be isolated from the supply circuit. The ampere rating of this disconnecting means will not be less than the supply conductor ampacity.

Shielding

Whenever practicable, all arc welding and cutting operations will be shielded by noncombustible or flameproof screen that will protect employees and other persons working in the vicinity from the direct rays of the arc.

Fire Prevention

When practical, objects to be welded, cut or heated will be moved to a designated safe location or, if these objects cannot be readily moved, all movable fire hazards in the vicinity will be taken to a safe place or otherwise protected. If these objects cannot be moved and if all the fire hazards cannot be removed, positive means will be taken to confine the heat, sparks and slag and to protect the immovable fire hazards from them.

No welding, cutting or heating will be done where the application of flammable paints or the presence of other flammable compounds or heavy dust concentrations creates a hazard.

Suitable fire extinguishing equipment will be immediately available in the work area and will be maintained in a state or readiness for instant use.

When the welding, cutting or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel will be assigned to guard against fire while the actual welding, cutting or heating operation is being performed and for a sufficient period of time after completion of the work to ensure that no possibility of fire exists. Such personnel will be instructed as to the specific anticipated fire hazards and how the firefighting equipment provided is to be used.

When welding, cutting or heating is performed on walls, floors and ceilings, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent area, the same precautions will be taken on the opposite side as are taken on the side on which the welding is being performed.

For the elimination of possible fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch will be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch period. Overnight and at the change of shifts, the torch and hose will be removed from the confined space. Open end fuel gas and oxygen hoses will be immediately removed from enclosed spaces when they are disconnected from the torch or other gas-consuming device.

Except when the contents are being removed or transferred, drums, pails and other containers that contain or have contained flammable liquids will be kept closed. Empty containers will be removed to a safe area apart from hot work operations or open flames.

Mechanical Ventilation

Mechanical ventilation will consist of either general mechanical ventilation systems or local exhaust systems.

Occupational Health and Environmental Controls

Contaminated air exhausted from a working space will be discharged clear of the source of intake air.

All air replacing that withdrawn will be clean and respirable.

Oxygen will not be used for ventilation purposes, comfort cooling, blowing dust from clothing or cleaning the work area.

Welding, Cutting and Heating in Confined Spaces

Except where air line respirators are required or allowed as described below, adequate mechanical ventilation meeting the requirements described above will be provided whenever welding, cutting or heating is performed in a confined space.

When sufficient ventilation cannot be obtained without blocking the means of access, employees in the confined space will be protected by air line respirators. An employee on the outside of the confined space will be assigned to maintain communication with those working within it and to aid them in an emergency.

Where a welder must enter a confined space through a small opening, means will be provided for quickly removing him or her in case of emergency. When safety belts and lifelines are used for this purpose, they will be so attached to the welder's body that his or her body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure will be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.

Welding, Cutting or Heating of Metals of Toxic Significance

Welding, cutting or heating in any enclosed spaces involving the following metals will be performed with adequate mechanical ventilation as described above:

- Zinc-bearing base or filler metals or metals coated with zinc-bearing materials.
- Lead base metals.
- Cadmium-bearing filler materials.
- Chromium-bearing metals or metals coated with chromium-bearing materials.

Welding, cutting or heating in any enclosed spaces involving the following metals will be performed with adequate local exhaust ventilation as described above or employees shall be protected by air line respirators:

- Metals containing lead, other than as an impurity, or metals coated with lead-bearing materials.
- Cadmium-bearing or cadmium-coated base metals.
- Metal coated with mercury-bearing metals.
- Beryllium-containing base or filler metals. Because of its high toxicity, work involving beryllium will be done with both local exhaust ventilation and air line respirators.

Employees performing such operations in the open air will be protected by filter-type respirators except that employees performing such operations on beryllium-containing base or filler metals will be protected by air line respirators.

Other employees exposed to the same atmosphere as the welders or burners will be protected in the same manner as the welder or burner.

Inert-Gas Metal-Arc Welding

Since the inert-gas metal-arc welding process involves the production of ultraviolet radiation of intensities of 5 to 30 times that produced during shielded metal-arc welding, the decomposition of chlorinated solvents by ultraviolet rays, and the liberation of toxic fumes and gases, employees will not be permitted to engage in or be exposed to the process until the following special precautions have been taken:

The use of chlorinated solvents will be kept at least 200 feet, unless shielded, from the exposed arc, and surfaces prepared with chlorinated solvents will be thoroughly dry before welding is permitted on such surfaces.

Employees in the area not protected from the arc by screening will be protected by filter lenses. When two or more welders are exposed to each other's arc, filter lens goggles of a suitable type will be worn under welding helmets. Hand shields to protect the welder against flashes and radiant energy will be used when either the helmet is lifted or the shield is removed.

Welders and other employees who are exposed to radiation will be suitably protected so that the skin is covered completely to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields will be free of leaks and openings, and highly reflective surfaces.

When inert-gas metal-arc welding is being performed on stainless steel, adequate local exhaust ventilation as described above or air line respirators will be used to protect against dangerous concentrations of nitrogen dioxide.

General Welding, Cutting and Heating

Welding, cutting or heating not involving conditions or toxic materials described above may normally be done without mechanical ventilation or respiratory protective equipment. These protections will be provided, however, where an unsafe accumulation of contaminants exists because of unusual physical or atmospheric conditions.

Employees performing any type of welding, cutting or heating will be protected by suitable eye protective equipment.

*(**Note:** The following section contains example training matrixes. Please add, modify or delete content to each matrix as deemed necessary to meet your company's needs. The matrixes and course descriptions are a **best practice**.)*

Section 3
Training and Instruction

Employee Training

Orientation/Initial Training

All employees will go through an orientation training program that covers safe work practices, OSHA requirements, and safety policies and procedures. Depending on the employee's job or career track, the employee will then be released to the safety coordinator for on-the-job training (OJT), combination OJT/classroom, or other job progression training schedule. All employees will also be on a probation period dictated by human resources and management.

Orientation Training Matrix—Initial (Example)

Day 1	Day 2	Day 3	Day 4	Day 5
Welcome and Introductions	Respiratory Protection*	Hazard Communication*	Forklifts*	Fall Protection
Company Safety Policy and Procedures	PPE*	Trenching and Excavations	Scaffolding	Ladder Safety
Company Safety Policy and Procedures	Hot Work Permit	Hazardous Materials	Noise and Hearing Protection*	Dipping and Coating
Accident Reporting and Investigation	Welding, Cutting and Brazing *	Emergency Eyewash and Shower	Fire Extinguishers*	Spray Finishing
Workers' Compensation, Return to Work	Hygiene and Decontamination	Electrical Safety*	Air Contaminants/ Industrial Hygiene	Compressed Gas Cylinders
Substance Abuse Policy/Disciplinary Policy	Hand and Power Tools	Ergonomics	Fleet Management	Bloodborne Pathogens*
Walking and Working Surfaces	Machine Guarding*	LOTO*	Emergency Action*	Safe Work Practices
Housekeeping	Chemical Hygiene	Thermal Exposures	Fire Prevention*	Summary

Note: *Orientation topics will be modified as needed to best meet the needs of the employees and the Company. Each topic will be covered for a minimum of 30 minutes. Some topics may require several hours depending on the employee's assigned job duties and responsibilities.*

*Required by OSHA—initial training (dependent on assigned job duties and responsibilities)

On-the-Job Training (OJT)

Each department has an OJT matrix that each new employee goes through before being released. The matrix for each department will be reviewed and updated as necessary by management.

OJT Matrix (Example)

Job: All **Department:**

Conducted by: Safety Coordinator **Company:**

Week 1	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
	OJT—safe work practices	OJT—safe work practices	OJT—safe work practices	OJT—safe work practices	OJT—safe work practices

Note: Dependent on assigned job duties and responsibilities. Training may be a few days to several weeks.

Annual Refresher Training

Annual refresher training will be conducted by each department on required OSHA and other safety and health topics along with job safe practices. The following matrix will be updated and modified based on company needs. This will be the responsibility of management.

Annual Refresher Training Matrix (Example)

Job: All **Department:**

Trainer: Safety Coordinator **Location:** Company

Day 1	Day 2	Day 3	Day 4	Day 5
Lockout/Tagout*	PPE	Forklift Safety**	Chemical Hygiene	Scaffolding
Hearing Conservation*	Welding, Cutting, and Brazing	Forklift Safety**	Spray Finishing	Fleet Management
Respiratory Protection*	Walking and Working Surfaces	Hot Work Permit	Industrial Hygiene	Hazardous Materials
Fire Extinguishers*	Emergency Action	Housekeeping	Dip Coating	Bloodborne Pathogens*
Machine Guarding*	Fire Prevention	Fall Protection	Air Contaminants	Safe Work Practices
Trenching and Excavations	Electrical Safety	Ladder Safety	Thermal Exposures	Safe Work Practices
Accident Reporting	Safe Work Practices	Workers' Compensation, Return to Work	Ergonomics	Safe Work Practices
Hand and Power Tools	Safe Work Practices	Substance Abuse Policy/Disciplinary Policy	Compressed Gas Cylinders	Summary

Each topic will be covered for a minimum of 30 minutes or based on need. All employees will receive annual refresher training. **Note:** Dependent on assigned job duties and responsibilities.

*Required by OSHA annually
**Required by OSHA every three years; OJT is optional.

Note: Fire extinguisher training is required annually when you require your employees to use them—not required if you don't. Machinery and machine guarding training is required annually if the company has mechanical power presses.

Note: *The following section contains example job progression training and skills assessments and matrixes. Please add, modify or delete content to each assessment and matrix as deemed necessary to meet your company's needs. These are a* ***best practice*** *only.*

Job Progression Training and Skills Assessment

The following departments are responsible for ensuring that the identified jobs follow their job progression matrix. They will also conduct a skills assessment to ensure adequate job progression. The skills assessment will be conducted at least annually.

Department	**Job**

Job Progression Matrix

Job:	**Department:**
Year 1	
Year 2	
Year 3	
Year 4	
Year 5	
Year 6	
Year 7	
Year 8	

The skills assessment form for each employee will be maintained in the personnel files.

Skills Assessment Form

Job:	**Date:**
Skill:	
Assessor:	**Rating:**
Employee:	

Note: *The following section contains example periodic training schedules. Please add, modify or delete content to each schedule as deemed necessary to meet your company's needs. These are a* ***best practice*** *only.*

Periodic Training

Periodic safety training, which includes daily, weekly and monthly safety talks, will be conducted within specific departments along with prejob briefings.

Daily Safety Talks

The following departments will conduct daily five-minute safety talks (can be used in lieu of prejob briefings):

_____

_____

_____

_____

Topic choices are up to the supervisor or *(Insert job title of person responsible)*. A roster will be maintained for the personnel files.

Weekly Safety Talks

The following departments will conduct weekly safety talks:

_____

_____

_____

_____

Topic choices are up to the supervisor or *(Insert job title of person responsible)*. A roster will be maintained for the personnel files.

Monthly Safety Talks

The following departments will conduct monthly safety talks:

_____

_____

_____

_____

Topic choices are up to the supervisor or *(Insert job title of person responsible)*. A roster will be maintained for the personnel files.

Note: *Many OSHA standards require training, and some do not require documentation that the training was conducted. Documenting all training is a* ***best practice****. Many training records are required to be kept for three years; refer to the relevant OSHA standard for required recordkeeping timelines. If training is only required initially and then as needed thereafter, as a* ***best practice****, maintain your training records as deemed appropriate for your company.*

Employee Training Roster/Certificate of Training

Topic: _____Date:_____

Trainer: _____

Employee Name:	Department:	Signature:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Management Training

To ensure that managers have the skill sets required for their respective duties and responsibilities, they will receive at least (*insert number of hours*) hours annually of safety and health continuing education training. The following matrix will be updated and modified based on company and departmental needs.

This will be the responsibility of: (*Insert job title of person responsible*).

Management Training Matrix (Example)

Day 1	Day 2	Day 3	Day 4	Day 5
Welcome and Introductions	Management Skills	Risk Management	Company Safety Programs Refresher	Job Progression
Workers' Compensation	Management Skills	Risk Management	Company Safety Programs Refresher	Job Progression
Workers' Compensation	Management Skills	Risk Management	Company Safety Programs Refresher	Skills Assessment
Accident Investigations and Reporting	Management Skills	Risk Control	Company Safety Programs Refresher	Skills Assessment
Accident Review Boards	Risk Financing	Risk Control	Company Safety Programs Refresher	Job Safety Analyses
OSHA 300 Log, DART, and TCR	Risk Financing	Preventive Maintenance	Company Safety Programs Refresher	Job Safety Analyses
Safety Management	Union Process	Inspections	Prejob Briefings	Safe Work Practices
Safety Management	Disciplinary Policy/Alcohol and Drug Policy	Fleet Management	Safety Talks	Summary and Closing Remarks

Supervisor Training

To ensure that supervisors have the skill sets required for their respective duties and responsibilities, they will receive at least (*insert number of hours*) hours annually of safety and health continuing education training. The following matrix will be updated and modified based on company and departmental needs.

This will be the responsibility of: (*Insert job title of person responsible*).

Supervisor Training Matrix (Example) **Department: _____**

Day 1	Day 2	Day 3	Day 4	Day 5
Welcome and Introductions	OSHA 300 Log, DART and TCR	Union Process	Company Safe Work Practices	Skills Assessment
Workers' Compensation	Leadership Skills	Conducting Inspections	Company Safe Work Practices	Skills Assessment
Workers' Compensation	Leadership Skills	Company Safety Programs—Refresher	Company Safe Work Practices	Skills Assessment
Accident Reporting	Leadership Skills	Company Safety Programs—Refresher	Company Safe Work Practices	Job Progression
Supervisor Accident Investigations	Safety Management	Company Safety Programs—Refresher	Company Safe Work Practices	Job Progression
Supervisor Accident Investigations	Risk Control	Company Safety Programs—Refresher	Preventive Maintenance	Job safety Analyses
Accident Reviews and Corrective Action	Risk Management	Company Safety Programs—Refresher	Inspections	Safety Talks
Accident Reviews and Corrective Action	Disciplinary Policy/Alcohol and Drug Policy	Company Safety Programs—Refresher	Prejob Briefings	Summary and Closing Remarks

Section 4
Reference Material

N.C. Department of Labor

A–Z Topics
http://www.nclabor.com/osha/etta/A_to_Z_Topics/a_to_z_toc.htm

OSH Division Compliance Material
http://www.nclabor.com/osha/compliance/manuals.htm

PowerPoint Presentations
http://www.nclabor.com/osha/etta/presentations/presentations.htm

Publications
http://www.nclabor.com/pubs.htm

Safety and Health Programs
http://www.nclabor.com/osha/consult/sample_programs.htm

Training Requirements
http://www.nclabor.com/osha/etta/indguide/ig8.pdf

Federal Occupational Safety and Health Administration

Publications
http://www.osha.gov/pls/publications/publication.html

Training Resources
http://www.osha.gov/dte/index.html

Ergonomic Resources
http://www.osha.gov/SLTC/ergonomics/guidelines.html

Section 5
Facility Inspection Forms

- Comprehensive Safety Inspection Checklist
- Monthly Building Inspection Form

Comprehensive Safety Inspection Checklist

Yes	No	NA	
			Employer Posting
☐	☐	☐	Is the required NCDOL workplace poster displayed in a prominent location where all employees are likely to see it?
☐	☐	☐	Are emergency telephone numbers posted where they can be readily found in case of emergency?
☐	☐	☐	Where employees may be exposed to any toxic substances or harmful physical gents, has appropriate information concerning employee access to medical and exposure records and material safety data sheets (MSDS) been posted or otherwise made readily available to affected employees?
☐	☐	☐	Are signs concerning "exiting from buildings," room capacities, floor loading, biohazards, exposures to X-ray, microwave, or other harmful radiation or substances posted where appropriate?
☐	☐	☐	Is the summary of occupational injuries and illnesses posted February through April?
			Recordkeeping
☐	☐	☐	Are all occupational injuries and illnesses, except minor injuries requiring only first aid, being recorded as required on the OSHA 300 log?
☐	☐	☐	Are employee medical records and records of employee exposure to hazardous substances or harmful physical agents up-to-date and in compliance with current OSHA standards?
☐	☐	☐	Are employee training records kept and accessible for review by employees, when required by OSHA standards?
☐	☐	☐	Have arrangements been made to maintain required records for the legal period of time for each specific type of record? (Some records must be maintained for at least 40 years.)
☐	☐	☐	Are operating permits and records up to date for such items as elevators, air pressure tanks and liquefied petroleum gas tanks?
			Safety and Health Program
☐	☐	☐	Do you have an active safety and health program in operation that deals with general safety and health program elements as well as the management of hazards specific to your worksite?
☐	☐	☐	Is one person clearly responsible for the overall activities of the safety and health program?
☐	☐	☐	Do you have a working procedure for handling in-house employee complaints regarding safety and health?
			Medical Services and First Aid
☐	☐	☐	Is there a hospital, clinic or infirmary for medical care in proximity of your workplace?
☐	☐	☐	If medical and first aid facilities are not in proximity of your workplace, is at least one employee on each shift currently qualified to render first aid?
☐	☐	☐	Have all employees who are expected to respond to medical emergencies as part of their work: (1) received first aid training; (2) had hepatitis B vaccination made available to them; (3) had appropriate training on procedures to protect them from bloodborne pathogens, including universal precautions; and (4) have available and understand how to use appropriate personal protective equipment to protect against exposure to bloodborne diseases?
☐	☐	☐	Where employees have had an exposure incident involving bloodborne pathogens, did you provide an immediate post-exposure medical evaluation and follow-up?
☐	☐	☐	Are medical personnel readily available for advice and consultation on matters of employees' health?
☐	☐	☐	Are emergency phone numbers posted?

Yes	No	NA	
☐	☐	☐	Are first aid kits easily accessible to each work area, with necessary supplies available, periodically inspected and replenished as needed?
☐	☐	☐	Have first aid kit supplies been approved by a physician, indicating that they are adequate for a particular area or operation?
☐	☐	☐	Are means provided for quick drenching or flushing of the eyes and body in areas where corrosive liquids or materials are handled?
			Fire Protection
☐	☐	☐	Is your local fire department well acquainted with your facilities, its location and specific hazards?
☐	☐	☐	If you have a fire alarm system, is it certified as required?
☐	☐	☐	If you have a fire alarm system, is it tested at least annually?
☐	☐	☐	If you have interior standpipes and valves, are they inspected regularly?
☐	☐	☐	If you have outside private fire hydrants, are they flushed at least once a year and on a routine preventive maintenance schedule?
☐	☐	☐	Are fire doors and shutters in good operating condition?
☐	☐	☐	Are fire doors and shutters unobstructed and protected against obstructions, including their counterweights?
☐	☐	☐	Are fire door and shutter fusible links in place?
☐	☐	☐	Are automatic sprinkler system water control valves, air and water pressure checked weekly/periodically as required?
☐	☐	☐	Is the maintenance of automatic sprinkler systems assigned to responsible people or to a sprinkler contractor?
☐	☐	☐	Are sprinkler heads protected by metal guards, when exposed to physical damage?
☐	☐	☐	Is proper clearance maintained below sprinkler heads?
☐	☐	☐	Are portable fire extinguishers provided in adequate number and type?
☐	☐	☐	Are fire extinguishers mounted in readily accessible locations?
☐	☐	☐	Are fire extinguishers recharged regularly and noted on the inspection tag?
☐	☐	☐	Are employees periodically instructed in the use of extinguishers and fire protection procedures?
			Personal Protective Equipment and Clothing
☐	☐	☐	Are protective goggles or face shields provided and worn where there is any danger of flying particles or corrosive materials?
☐	☐	☐	Are approved safety glasses required to be worn at all times in areas where there is a risk of eye injuries such as punctures, abrasions, contusions or burns?
☐	☐	☐	Are employees who need corrective lenses (glasses or contacts) in working environments having harmful exposures required to wear only approved safety glasses or protective goggles or use other medically approved precautionary procedures?
☐	☐	☐	Are protective gloves, aprons, shields or other means provided and required where employees could be cut or where there is reasonably anticipated exposure to corrosive liquids, chemicals, blood or other potentially infectious materials? (See 29 CFR 1910.1030(b) for the definition of "other potentially infectious materials.")
☐	☐	☐	Are hard hats provided and worn where danger of falling objects exists?
☐	☐	☐	Are hard hats inspected periodically for damage to the shell and suspension system?

Yes	No	NA	
☐	☐	☐	Is appropriate foot protection required where there is the risk of foot injuries from hot, corrosive or poisonous substances, falling objects, and crushing or penetrating actions?
☐	☐	☐	Are approved respirators provided for regular or emergency use where needed?
☐	☐	☐	Is all protective equipment maintained in a sanitary condition and ready for use?
☐	☐	☐	Do you have eyewash facilities and a quick drench shower within the work area where employees are exposed to injurious corrosive materials?
☐	☐	☐	Where special equipment is needed for electrical workers, is it available?
☐	☐	☐	Where food or beverages are consumed on the premises, are they consumed in areas where there is no exposure to toxic material, blood or other potentially infectious materials?
☐	☐	☐	Is protection against the effects of occupational noise exposure provided when sound levels exceed those of the OSHA noise standard?
☐	☐	☐	Are adequate work procedures, protective clothing and equipment provided and used when cleaning up spilled toxic or otherwise hazardous materials and liquids?
☐	☐	☐	Are there appropriate procedures in place for disposing of or decontaminating personal protective equipment contaminated with, or reasonably anticipated to be contaminated with, blood or other potentially infectious materials?
			General Work Environment
☐	☐	☐	Are all worksites clean, sanitary and orderly?
☐	☐	☐	Are work surfaces kept dry or appropriate means taken to ensure the surfaces are slip-resistant?
☐	☐	☐	Are all spilled hazardous materials or liquids, including blood and other potentially infectious materials, cleaned up immediately and according to proper procedures?
☐	☐	☐	Are combustible scrap, debris and waste stored safely and removed from the worksite promptly?
☐	☐	☐	Is all regulated waste, as defined in the OSHA bloodborne pathogens standard (29 CFR 1910.1030), discarded according to federal, state and local regulations?
☐	☐	☐	Are accumulations of combustible dust routinely removed from elevated surfaces including the overhead structure of buildings?
☐	☐	☐	Is combustible dust cleaned up with a vacuum system to prevent the dust going into suspension?
☐	☐	☐	Is metallic or conductive dust prevented from entering or accumulating on or around electrical enclosures or equipment?
☐	☐	☐	Are covered metal waste cans used for oily and paint-soaked waste?
☐	☐	☐	Are all oil and gas fired devices equipped with flame failure controls that will prevent flow of fuel if pilots or main burners are not working?
☐	☐	☐	Are paint spray booths, dip tanks, etc., cleaned regularly?
☐	☐	☐	Are the minimum number of toilets and washing facilities provided?
☐	☐	☐	Are all toilets and washing facilities clean and sanitary?
☐	☐	☐	Are all work areas adequately illuminated?
☐	☐	☐	Are pits and floor openings covered or otherwise guarded?
			Walkways
☐	☐	☐	Are aisles and passageways kept clear?
☐	☐	☐	Are aisles and walkways marked as appropriate?

Yes	No	NA	
☐	☐	☐	Are wet surfaces covered with nonslip materials?
☐	☐	☐	Are holes in the floor, sidewalk or other walking surfaces repaired properly, covered or otherwise made safe?
☐	☐	☐	Is there safe clearance for walking in aisles where motorized or mechanical handling equipment is operating?
☐	☐	☐	Are materials or equipment stored in such a way that sharp projectiles will not interfere with the walkway?
☐	☐	☐	Are spilled materials cleaned up immediately?
☐	☐	☐	Are changes of direction or elevation readily identifiable?
☐	☐	☐	Are aisles or walkways that pass near moving or operating machinery, welding operations, or similar operations arranged so employees will not be subjected to potential hazards?
☐	☐	☐	Is adequate headroom provided for the entire length of any aisle or walkway?
☐	☐	☐	Are standard guardrails provided wherever aisle or walkway surfaces are elevated more than 30 inches above any adjacent floor or the ground?
☐	☐	☐	Are bridges provided over conveyors and similar hazards?
			Floor and Wall Openings
☐	☐	☐	Are floor openings guarded by a cover, guardrail or equivalent on all sides (except at entrance to stairways or ladders)?
☐	☐	☐	Are toeboards installed around the edges of permanent floor openings (where people may pass below the opening)?
☐	☐	☐	Are skylight screens of such construction and mounting that they will withstand a load of at least 200 pounds?
☐	☐	☐	Is the glass in the windows, doors, glass walls, etc., which are subject to human impact, of sufficient thickness and type for the condition of use?
☐	☐	☐	Are grates or similar type covers over floor openings such as floor drains of such design that foot traffic or rolling equipment will not be affected by the grate spacing?
☐	☐	☐	Are unused portions of service pits and pits not actually in use either covered or protected by guardrails or equivalent?
☐	☐	☐	Are manhole covers, trench covers and similar covers, plus their supports, designed to carry a truck rear axle load of at least 20,000 pounds when located in roadways and subject to vehicle traffic?
☐	☐	☐	Are floor or wall openings in fire-resistive construction provided with doors or covers compatible with the fire rating of the structure and provided with a self-closing feature when appropriate?
			Stairs and Stairways
☐	☐	☐	Are standard stair rails or handrails on all stairways having four or more risers?
☐	☐	☐	Are all stairways at least 22 inches wide?
☐	☐	☐	Do stairs have landing platforms not less than 30 inches in the direction of travel and extend 22 inches in width at every 12 feet or less of vertical rise?
☐	☐	☐	Do stairs angle no more than 50 and no less than 30 degrees?
☐	☐	☐	Are stairs of hollow-pan type treads and landings filled to the top edge of the pan with solid material?
☐	☐	☐	Are step risers on stairs uniform from top to bottom?
☐	☐	☐	Are steps on stairs and stairways designed or provided with a surface that renders them slip resistant?

Yes	No	NA	
☐	☐	☐	Are stairway handrails located between 30 and 34 inches above the leading edge of stair treads?
☐	☐	☐	Do stairway handrails have at least 3 inches of clearance between the handrails and the wall or surface they are mounted on?
☐	☐	☐	Where doors or gates open directly on a stairway, is there a platform provided so the swing of the door does not reduce the width of the platform to less than 21 inches?
☐	☐	☐	Are stairway handrails capable of withstanding a load of 200 pounds, applied within 2 inches of the top edge, in any downward or outward direction?
☐	☐	☐	Where stairs or stairways exit directly into any area where vehicles may be operated, are adequate barriers and warnings provided to prevent employees stepping into the path of traffic?
☐	☐	☐	Do stairway landings have a dimension measured in the direction of travel at least equal to the width of the stairway?
☐	☐	☐	Is the vertical distance between stairway landings limited to 12 feet or less?
			Elevated Surfaces
☐	☐	☐	Are signs posted, when appropriate, showing the elevated surface load capacity?
☐	☐	☐	Are surfaces elevated more than 30 inches above the floor or ground provided with standard guardrails?
☐	☐	☐	Are all elevated surfaces (beneath which people or machinery could be exposed to falling objects) provided with standard 4-inch toeboards?
☐	☐	☐	Is a permanent means of access and egress provided to elevated storage and work surfaces?
☐	☐	☐	Is required headroom provided where necessary?
☐	☐	☐	Is material on elevated surfaces piled, stacked or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading?
☐	☐	☐	Are dockboards or bridge plates used when transferring materials between docks and trucks or rail cars?
			Exiting or Egress
☐	☐	☐	Are all exits marked with an exit sign and illuminated by a reliable light source?
☐	☐	☐	Are the directions to exits, when not immediately apparent, marked with visible signs?
☐	☐	☐	Are doors, passageways or stairways that are neither exits nor access to exits and which could be mistaken for exits appropriately marked “NOT AN EXIT,” “TO BASEMENT,” “STOREROOM,” etc.?
☐	☐	☐	Are exit signs provided with the word “EXIT” in lettering at least 5 inches high and the stroke of the lettering at least ½-inch wide?
☐	☐	☐	Are exit doors side-hinged?
☐	☐	☐	Are all exits kept free of obstructions?
☐	☐	☐	Are at least two means of egress provided from elevated platforms, pits or rooms where the absence of a second exit would increase the risk of injury from hot, poisonous, corrosive, suffocating, flammable or explosive substances?
☐	☐	☐	Are there sufficient exits to permit prompt escape in case of emergency?
☐	☐	☐	Are special precautions taken to protect employees during construction and repair operations?
☐	☐	☐	Is the number of exits from each floor of a building, and the number of exits from the building itself, appropriate for the building occupancy load?
☐	☐	☐	Are exit stairways that are required to be separated from other parts of a building enclosed by at least two-hour fire-resistive construction in buildings more than four stories in height, and not less than one-hour fire-resistive construction elsewhere?

Yes	No	NA	
☐	☐	☐	Where ramps are used as part of required exiting from a building, is the ramp slope limited to 1 foot vertical and 12 feet horizontal?
☐	☐	☐	Where exiting will be through frameless glass doors, glass exit doors, storm doors, etc., are the doors fully tempered and do they meet the safety requirements for human impact?
			Exit Doors
☐	☐	☐	Are doors that are required to serve as exits designed and constructed so that the way of exit travel is obvious and direct?
☐	☐	☐	Are windows that could be mistaken for exit doors made inaccessible by means of barriers or railings?
☐	☐	☐	Are exit doors openable from the direction of exit travel without the use of a key or any special knowledge or effort when the building is occupied?
☐	☐	☐	Is a revolving, sliding or overhead door prohibited from serving as a required exit door?
☐	☐	☐	Where panic hardware is installed on a required exit door, will it allow the door to open by applying a force of 15 pounds or less in the direction of the exit traffic?
☐	☐	☐	Are doors on cold storage rooms provided with an inside release mechanism that will release the latch and open the door even if it's padlocked or otherwise locked on the outside?
☐	☐	☐	Where exit doors open directly onto any street, alley or other area where vehicles may be operated, are adequate barriers and warnings provided to prevent employees stepping into the path of traffic?
☐	☐	☐	Are doors that swing in both directions and are located between rooms where there is frequent traffic provided with viewing panels in each door?
			Portable Ladders
☐	☐	☐	Are all ladders maintained in good condition, joints between steps and side rails tight, all hardware and fittings securely attached, and moveable parts operating freely without binding or undue play?
☐	☐	☐	Are nonslip safety feet provided on each ladder?
☐	☐	☐	Are nonslip safety feet provided on each metal or rung ladder?
☐	☐	☐	Are ladder rungs and steps free of grease and oil?
☐	☐	☐	Is it prohibited to place a ladder in front of doors opening toward the ladder except when the door is blocked open, locked or guarded?
☐	☐	☐	Is it prohibited to place ladders on boxes, barrels or other unstable bases to obtain additional height?
☐	☐	☐	Are employees instructed to face the ladder when ascending or descending?
☐	☐	☐	Are employees prohibited from using ladders that are broken, missing steps, rungs, or cleats, broken side rails, or other faulty equipment?
☐	☐	☐	Are employees instructed not to use the top step of ordinary stepladders as a step?
☐	☐	☐	When portable rung ladders are used to gain access to elevated platforms, roofs, etc., does the ladder always extend at least 3 feet above the elevated surface?
☐	☐	☐	Is it required that when portable rung or cleat type ladders are used, the base is so placed that slipping will not occur, or it is latched or otherwise held in place?
☐	☐	☐	Are portable metal ladders marked with signs reading "CAUTION—Do Not Use Around Electrical Equipment" or equivalent wording?
☐	☐	☐	Are employees prohibited from using ladders as guys, braces, skids, gin poles or for other than their intended purposes?
☐	☐	☐	Are employees instructed to only adjust extension ladders while standing at a base (not while standing on the ladder or from a position above the ladder)?

Yes	No	NA	
☐	☐	☐	Are metal ladders inspected for damage?
☐	☐	☐	Are the rungs of ladders uniformly spaced at 12 inches, center to center?
			Hand Tools and Equipment
☐	☐	☐	Are all tools and equipment (both company- and employee-owned) used by employees at their workplace in good condition?
☐	☐	☐	Are hand tools such as chisels and punches that develop mushroomed heads during use reconditioned or replaced as necessary?
☐	☐	☐	Are broken or fractured handles on hammers, axes and similar equipment replaced promptly?
☐	☐	☐	Are worn or bent wrenches replaced regularly?
☐	☐	☐	Are appropriate handles used on files and similar tools?
☐	☐	☐	Are employees made aware of the hazards caused by faulty or improperly used hand tools?
☐	☐	☐	Are appropriate safety glasses, face shields, etc., used while using hand tools or other equipment that might produce flying materials or be subject to breakage?
☐	☐	☐	Are jacks checked periodically to ensure they are in good operating condition?
☐	☐	☐	Are tool handles wedged tightly in the head of all tools?
☐	☐	☐	Are tool cutting edges kept sharp so the tool will move smoothly without binding or skipping?
☐	☐	☐	Are tools stored in a dry, secure location where they won't be tampered with?
☐	☐	☐	Is eye and face protection used when driving hardened or tempered studs or nails?
			Portable (Power-Operated) Tools and Equipment
☐	☐	☐	Are grinders, saws and similar equipment provided with appropriate safety guards?
☐	☐	☐	Are power tools used with the correct shield, guard or attachment, recommended by the manufacturer?
☐	☐	☐	Are portable circular saws equipped with guards above and below the base shoe?
☐	☐	☐	Are circular saw guards checked to ensure they are not wedged up, thus leaving the lower portion of the blade unguarded?
☐	☐	☐	Are rotating or moving parts of equipment guarded to prevent physical contact?
☐	☐	☐	Are all cord-connected, electrically operated tools and equipment effectively grounded or of the approved double-insulated type?
☐	☐	☐	Are effective guards in place over belts, pulleys, chains, and sprockets on equipment such as concrete mixers and air compressors?
☐	☐	☐	Are portable fans provided with full guards or screens having openings ½ inch or less?
☐	☐	☐	Is hoisting equipment available and used for lifting heavy objects, and are hoist ratings and characteristics appropriate for the task?
☐	☐	☐	Are ground-fault circuit interrupters provided on all temporary electrical 15 and 20 ampere circuits used during periods of construction?
☐	☐	☐	Are pneumatic and hydraulic hoses on power-operated tools checked regularly for deterioration or damage?
			Abrasive Wheel Equipment—Grinders
☐	☐	☐	Is the work rest used and kept adjusted to within ⅛ inch of the wheel?
☐	☐	☐	Is the adjustable tongue on the top side of the grinder used and kept adjusted to within ¼ inch of the wheel?

Yes	No	NA	
☐	☐	☐	Do side guards cover the spindle, nut, flange and 75 percent of the wheel diameter?
☐	☐	☐	Are bench and pedestal grinders permanently mounted?
☐	☐	☐	Are goggles or face shields always worn when grinding?
☐	☐	☐	Is the maximum RPM rating of each abrasive wheel compatible with the RPM rating of the grinder motor?
☐	☐	☐	Are fixed or permanently mounted grinders connected to their electrical supply system with metallic conduit or other permanent wiring method?
☐	☐	☐	Does each grinder have an individual on and off control switch?
☐	☐	☐	Is each electrically operated grinder effectively grounded?
☐	☐	☐	Before new abrasive wheels are mounted, are they visually inspected and ring tested?
☐	☐	☐	Are dust collectors and powered exhausts provided on grinders used in operations that produce large amounts of dust?
☐	☐	☐	Are splash guards mounted on grinders that use coolant to prevent the coolant from reaching employees?
☐	☐	☐	Is cleanliness maintained around grinders?
			Powder-Actuated Tools
☐	☐	☐	Are employees who operate powder-actuated tools trained in their use?
☐	☐	☐	Is each powder-actuated tool stored in its own locked container when not being used?
☐	☐	☐	Are powder-actuated tools left unloaded until they are actually ready to be used?
☐	☐	☐	Are powder-actuated tools inspected for obstructions or defects each day before use?
☐	☐	☐	Do powder-actuated tool operators have and use appropriate personal protective equipment such as hard hats, safety goggles, safety shoes and ear protectors?
			Machine Guarding
☐	☐	☐	Is there a training program to instruct employees on safe methods of machine operation?
☐	☐	☐	Is there adequate supervision to ensure that employees are following safe machine operating procedures?
☐	☐	☐	Is there a regular program of safety inspection of machinery and equipment?
☐	☐	☐	Is all machinery and equipment kept clean and properly maintained?
☐	☐	☐	Is sufficient clearance provided around and between machines to allow for safe operations, set up and servicing, material handling, and waste removal?
☐	☐	☐	Are equipment and machinery securely placed and anchored when necessary to prevent tipping or other movement that could result in personal injury?
☐	☐	☐	Is there a power shut-off switch within reach of the operator's position at each machine?
☐	☐	☐	Can electric power to each machine be locked out for maintenance, repair or security?
☐	☐	☐	Are the noncurrent-carrying metal parts of electrically operated machines bonded and grounded?
☐	☐	☐	Are foot-operated switches guarded or arranged to prevent accidental actuation by personnel or falling objects?
☐	☐	☐	Are manually operated valves and switches controlling the operation of equipment and machines clearly identified and readily accessible?
☐	☐	☐	Are all emergency stop buttons colored red?

Yes	No	NA	
☐	☐	☐	Are all pulleys and belts that are within 7 feet of the floor or working level properly guarded?
☐	☐	☐	Are all moving chains and gears properly guarded?
☐	☐	☐	Are splash guards mounted on machines that use coolant to prevent the coolant from reaching employees?
☐	☐	☐	Are methods provided to protect the operator and other employees in the machine area from hazards created at the point of operation, ingoing nip points, rotating parts, flying chips and sparks?
☐	☐	☐	Are machinery guards secure and so arranged that they do not offer a hazard in their use?
☐	☐	☐	If special hand tools are used for placing and removing material, do they protect the operator's hands?
☐	☐	☐	Are revolving drums, barrels and containers required to be guarded by an enclosure that is interlocked with the drive mechanism, so that revolution cannot occur unless the guard enclosure is in place?
☐	☐	☐	Do arbors and mandrels have firm and secure bearings and are they free from play?
☐	☐	☐	Are provisions made to prevent machines from automatically starting when power is restored after a power failure or shutdown?
☐	☐	☐	Are machines constructed so as to be free from excessive vibration when the largest size tool is mounted and run at full speed?
☐	☐	☐	If machinery is cleaned with compressed air, is air pressure controlled and personal protective equipment or other safeguards utilized to protect operators and other workers from eye and body injury?
☐	☐	☐	Are fan blades protected with a guard having openings no larger than ½ inch when operating within 7 feet of the floor?
☐	☐	☐	Are saws used for ripping equipped with anti-kick back devices and spreaders?
☐	☐	☐	Are radial arm saws so arranged that the cutting head will gently return to the back of the table when released?
			Lockout/Tagout Procedures
☐	☐	☐	Is all machinery or equipment capable of movement required to be de-energized or disengaged and blocked or locked out during cleaning, servicing, adjusting or setting up operations, whenever required?
			Where the power disconnecting means for equipment does not also disconnect the electrical control circuit:
☐	☐	☐	Are the appropriate electrical enclosures identified?
☐	☐	☐	Is means provided to ensure the control circuit can also be disconnected and locked out?
☐	☐	☐	Is the locking out of control circuits in lieu of locking out main power disconnects prohibited?
☐	☐	☐	Are all equipment control valve handles provided with a means for locking out?
☐	☐	☐	Does the lockout procedure require that stored energy (mechanical, hydraulic, air, etc.) be released or blocked before equipment is locked out for repairs?
☐	☐	☐	Are appropriate employees provided with individually keyed personal safety locks?
☐	☐	☐	Are employees required to keep personal control of their keys while they have safety locks in use?
☐	☐	☐	Is it required that only the employee exposed to the hazard place or remove the safety lock?
☐	☐	☐	Is it required that employees check the safety of the lockout by attempting to start up after making sure no one is exposed?
☐	☐	☐	Are employees instructed to always push the control circuit stop button prior to re-energizing the main power switch?
☐	☐	☐	Is there a means provided to identify any or all employees who are working on locked-out equipment by their locks or accompanying tags?

Yes	No	NA	
☐	☐	☐	Are a sufficient number of accident preventive signs or tags and safety padlocks provided for any reasonably foreseeable repair emergency?
☐	☐	☐	When machine operations, configuration or size requires the operator to leave his or her control station to install tools or perform other operations and that part of the machine could move if accidentally activated, is such element required to be separately locked or blocked out?
☐	☐	☐	In the event that equipment or lines cannot be shut down, locked out and tagged, is a safe job procedure established and rigidly followed?
			Welding, Cutting and Brazing
☐	☐	☐	Are only authorized and trained personnel permitted to use welding, cutting or brazing equipment?
☐	☐	☐	Do all operators have copies of the appropriate operating instructions and are they directed to follow them?
☐	☐	☐	Are compressed gas cylinders regularly examined for obvious signs of defects, deep rusting or leakage?
☐	☐	☐	Is care used in handling and storage of cylinders, safety valves, relief valves, etc., to prevent damage?
☐	☐	☐	Are precautions taken to prevent the mixture of air or oxygen with flammable gases, except at a burner or in a standard torch?
☐	☐	☐	Are only approved apparatus (torches, regulators, pressure-reducing valves, acetylene generators, manifolds) used?
☐	☐	☐	Are cylinders kept away from sources of heat?
☐	☐	☐	Are the cylinders kept away from elevators, stairs or gangways?
☐	☐	☐	Is it prohibited to use cylinders as rollers or supports?
☐	☐	☐	Are empty cylinders appropriately marked and their valves closed?
☐	☐	☐	Are signs reading “DANGER—NO SMOKING, MATCHES OR OPEN LIGHTS,” or the equivalent, posted?
☐	☐	☐	Are cylinders, cylinder valves, couplings, regulators, hoses and apparatus kept free of oily or greasy substances?
☐	☐	☐	Is care taken not to drop or strike cylinders?
☐	☐	☐	Unless secured on special trucks, are regulators removed and valve protection caps put in place before moving cylinders?
☐	☐	☐	Do cylinders without fixed wheels have keys, handles or nonadjustable wrenches on stem valves when in service?
☐	☐	☐	Are liquefied gases stored and shipped valve end up with valve covers in place?
☐	☐	☐	Are provisions made to never crack a fuel gas cylinder valve near sources of ignition?
☐	☐	☐	Before a regulator is removed, is the valve closed and gas released from the regulator?
☐	☐	☐	Is red used to identify the acetylene (and other fuel gas) hose, green for oxygen hose, and black for inert gas and air hose?
☐	☐	☐	Are pressure-reducing regulators used only for the gas and pressures for which they are intended?
☐	☐	☐	Is open circuit (no-load) voltage of arc welding and cutting machines as low as possible and not in excess of the recommended limits?
☐	☐	☐	Under wet conditions, are automatic controls for reducing no-load voltage used?
☐	☐	☐	Is grounding of the machine frame and safety ground connections of portable machines checked periodically?

Yes	No	NA	
☐	☐	☐	Are electrodes removed from the holders when not in use?
☐	☐	☐	Is it required that electric power to the welder be shut off when no one is in attendance?
☐	☐	☐	Is suitable fire extinguishing equipment available for immediate use?
☐	☐	☐	Is the welder forbidden to coil or loop welding electrode cable around his or her body?
☐	☐	☐	Are wet machines thoroughly dried and tested before being used?
☐	☐	☐	Are work and electrode lead cables frequently inspected for wear and damage and replaced when needed?
☐	☐	☐	Do means for connecting cable lengths have adequate insulation?
☐	☐	☐	When the object to be welded cannot be moved and fire hazards cannot be removed, are shields used to confine heat, sparks, and slag?
☐	☐	☐	Are fire watchers assigned when welding or cutting is performed in locations where a serious fire might develop?
☐	☐	☐	Are combustible floors kept wet, covered by damp sand or protected by fire-resistant shields?
☐	☐	☐	When floors are wet down, are personnel protected from possible electrical shock?
☐	☐	☐	When welding is done on metal walls, are precautions taken to protect combustibles on the other side?
☐	☐	☐	Before hot work is begun, are used drums, barrels, tanks and other containers so thoroughly cleaned that no substances remain that could explode, ignite or produce toxic vapors?
☐	☐	☐	Is it required that eye protection helmets, hand shields and goggles meet appropriate standards?
☐	☐	☐	Are employees exposed to the hazards created by welding, cutting or brazing operations protected with personal protective equipment and clothing?
☐	☐	☐	Is a check made for adequate ventilation where welding or cutting is performed?
☐	☐	☐	When working in confined places, are environmental monitoring tests taken and means provided for quick removal of welders in case of an emergency?
			Compressors and Compressed Air
☐	☐	☐	Are compressors equipped with pressure relief valves and pressure gauges?
☐	☐	☐	Are compressor air intakes installed and equipped so as to ensure that only clean uncontaminated air enters the compressor?
☐	☐	☐	Are air filters installed on the compressor intake?
☐	☐	☐	Are compressors operated and lubricated in accordance with the manufacturer's recommendations?
☐	☐	☐	Are safety devices on compressed air systems checked frequently?
☐	☐	☐	Before any repair work is done on the pressure system of a compressor, is the pressure bled off and the system locked out?
☐	☐	☐	Are signs posted to warn of the automatic starting feature of the compressors?
☐	☐	☐	Is the belt drive system totally enclosed to provide protection for the front, back, top and sides?
☐	☐	☐	Is it strictly prohibited to direct compressed air toward a person?
☐	☐	☐	Are employees prohibited from using highly compressed air for cleaning purposes?
☐	☐	☐	If compressed air is used for cleaning off clothing, is the pressure reduced to less than 30 psi?
☐	☐	☐	When using compressed air for cleaning, do employees wear protective chip guarding and personal protective equipment?

Yes	No	NA	
☐	☐	☐	Are safety chains or other suitable locking devices used at couplings of high pressure hose lines where a connection failure would create a hazard?
☐	☐	☐	Before compressed air is used to empty containers of liquid, is the safe working pressure of the container checked?
☐	☐	☐	When compressed air is used with abrasive blast cleaning equipment, is the operating valve a type that must be held open manually?
☐	☐	☐	When compressed air is used to inflate auto tires, is a clip-on chuck and an in-line regulator preset to 40 psi required?
☐	☐	☐	Is it prohibited to use compressed air to clean up or move combustible dust if such action could cause the dust to be suspended in the air and cause a fire or explosion hazard?
			Compressed Air Receivers
☐	☐	☐	Is every receiver equipped with a pressure gauge and with one or more automatic spring-loaded safety valves?
☐	☐	☐	Is the total relieving capacity of the safety valve capable of preventing pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent?
☐	☐	☐	Is every air receiver provided with a drainpipe and valve at the lowest point for the removal of accumulated oil and water?
☐	☐	☐	Are compressed air receivers periodically drained of moisture and oil?
☐	☐	☐	Are all safety valves tested frequently and at regular intervals to determine whether they are in good operating condition?
☐	☐	☐	Is the inlet of air receivers and piping systems kept free of accumulated oil and carbonaceous materials?
			Compressed Gas Cylinders
☐	☐	☐	Are cylinders with a water weight capacity over 30 pounds equipped with means for connecting a valve protector device or with a collar or recess to protect the valve?
☐	☐	☐	Are cylinders legibly marked to clearly identify the gas contained?
☐	☐	☐	Are compressed gas cylinders stored in areas that are protected from external heat sources such as flame impingement, intense radiant heat, electric arcs or high temperature lines?
☐	☐	☐	Are cylinders located or stored in areas where they will not be damaged by passing or falling objects or subjected to tampering by unauthorized people?
☐	☐	☐	Are cylinders stored or transported in a manner to prevent them from creating a hazard by tipping, falling or rolling?
☐	☐	☐	Are cylinders containing liquefied fuel gas stored or transported in a position so that the safety relief device is always in direct contact with the vapor space in the cylinder?
☐	☐	☐	Are valve protectors always placed on cylinders when the cylinders are not in use or connected for use?
☐	☐	☐	Are all valves closed off before a cylinder is moved, when the cylinder is empty, and at the completion of each job?
☐	☐	☐	Are low pressure fuel gas cylinders checked periodically for corrosion, general distortion, cracks or any other defect that might indicate a weakness or render it unfit for service?
☐	☐	☐	Does the periodic check of low pressure fuel gas cylinders include a close inspection of the cylinders' bottoms?
			Hoist and Auxiliary Equipment
☐	☐	☐	Is each overhead electric hoist equipped with a limit device to stop the hook travel at its highest and lowest point of safe travel?

Yes	No	NA	
☐	☐	☐	Will each hoist automatically stop and hold any load up to 125 percent of its rated load if its actuating force is removed?
☐	☐	☐	Is the rated load of each hoist legibly marked and visible to the operator?
☐	☐	☐	Are stops provided at the safe limits of travel for trolley hoists?
☐	☐	☐	Are the controls of hoists plainly marked to indicate the direction of travel or motion?
☐	☐	☐	Is each cage-controlled hoist equipped with an effective warning device?
☐	☐	☐	Are close-fitting guards or other suitable devices installed on hoists to ensure hoist ropes will be maintained in the sheave grooves?
☐	☐	☐	Are all hoist chains or ropes of sufficient length to handle the full range of movement of the application while still maintaining two full wraps on the drum at all times?
☐	☐	☐	Are nip points or contact points between hoist ropes and sheaves that are permanently located within 7 feet of the floor, ground or working platform guarded?
☐	☐	☐	Is it prohibited to use chains or rope slings that are kinked or twisted?
☐	☐	☐	Is it prohibited to use the hoist rope or chain wrapped around the load as a substitute for a sling?
☐	☐	☐	Is the operator instructed to avoid carrying loads over people?
☐	☐	☐	Are only employees who have been trained in the proper use of hoists allowed to operate them?
			Industrial Trucks—Forklifts
☐	☐	☐	Are only drivers authorized by the employer and trained in the safe operations of industrial trucks permitted to operate such vehicles?
☐	☐	☐	Does employer ensure that each powered industrial truck operator is competent to operate a powered industrial truck safely, as demonstrated by the successful completion of required training and evaluation in accordance with 1910.178(l)—Operator Training?
☐	☐	☐	Is substantial overhead protective equipment provided on high lift rider equipment?
☐	☐	☐	Are the required lift truck operating rules posted and enforced?
☐	☐	☐	Is directional lighting provided on each industrial truck that operates in an area with less than 2 foot candles per square foot of general lighting?
☐	☐	☐	Does each industrial truck have a warning horn, whistle, gong or other device that can be clearly heard above the normal noise in the areas where operated?
☐	☐	☐	Are the brakes on each industrial truck capable of bringing the vehicle to a complete and safe stop when fully loaded?
☐	☐	☐	Will the industrial truck's parking brake effectively prevent the vehicle from moving when unattended?
☐	☐	☐	Are industrial trucks operating in areas where flammable gases or vapors or combustible dust or ignitable fibers may be present in the atmosphere approved for such locations?
☐	☐	☐	Are motorized hand and hand/rider trucks so designed that the brakes are applied and power to the drive motor shuts off when the operator releases his or her grip on the device that controls the travel?
☐	☐	☐	Are industrial trucks with internal combustion engines, operated in buildings or enclosed areas, carefully checked to ensure such operations do not cause harmful concentrations of dangerous gases or fumes?
			Spraying Operations
☐	☐	☐	Is adequate ventilation ensured before spray operations are started?
☐	☐	☐	Is mechanical ventilation provided when spraying operations are done in enclosed areas?

Yes	No	NA	
☐	☐	☐	When mechanical ventilation is provided during spraying operations, is it so arranged that it will not circulate the contaminated air?
☐	☐	☐	Is the spray area free of hot surfaces?
☐	☐	☐	Is the spray area at least 20 feet from flames, sparks, operating electrical motors and other ignition sources?
☐	☐	☐	Are portable lamps used to illuminate spray areas suitable for use in a hazardous location?
☐	☐	☐	Is approved respiratory equipment provided and used when appropriate during spraying operations?
☐	☐	☐	Does the cleaning solvent have a flash point higher than the product used in the spraying operation?
☐	☐	☐	Are fire control sprinkler heads kept clean?
☐	☐	☐	Are “NO SMOKING” signs posted in spray areas, paint rooms, paint booths and paint storage areas?
☐	☐	☐	Is the spray area kept clean of combustible residue?
☐	☐	☐	Are spray booths constructed of metal, masonry or other substantial noncombustible material?
☐	☐	☐	Are spray booth floors and baffles noncombustible and easily cleaned?
☐	☐	☐	Is infrared drying apparatus kept out of the spray area during spraying operations?
☐	☐	☐	Is the spay booth completely ventilated before using the drying apparatus?
☐	☐	☐	Is the electric drying apparatus properly grounded?
☐	☐	☐	Are lighting fixtures for spray booths located outside of the booth and the interior lighted through sealed clear panels?
☐	☐	☐	Are the electric motors for exhaust fans placed outside booths or ducts?
☐	☐	☐	Are belts and pulleys inside the booth fully enclosed?
☐	☐	☐	Do ducts have access doors to allow cleaning?
☐	☐	☐	Do all drying spaces have adequate ventilation?
			Entering Confined Spaces
☐	☐	☐	Are confined spaces thoroughly emptied of any corrosive or hazardous substances, such as acids or caustics, before entry?
☐	☐	☐	Are all lines to a confined space containing inert, toxic, flammable or corrosive materials valved off and blanked or disconnected and separated before entry?
☐	☐	☐	Is it required that all impellers, agitators or other moving equipment inside confined spaces be locked out if they present a hazard?
☐	☐	☐	Is either natural or mechanical ventilation provided prior to confined space entry?
☐	☐	☐	Are appropriate atmospheric tests performed to check for oxygen deficiency, toxic substances and explosive concentrations in the confined space before entry?
☐	☐	☐	Is adequate illumination provided for the work to be performed in the confined space?
☐	☐	☐	Is the atmosphere inside the confined space frequently tested or continuously monitored during conduct of work?
☐	☐	☐	Is there an assigned safety standby employee outside of the confined space, when required, whose sole responsibility is to watch the work in progress, sound an alarm if necessary and render assistance?
☐	☐	☐	Is the standby employee appropriately trained and equipped to handle an emergency?
☐	☐	☐	Is the standby employee or other employees prohibited from entering the confined space without lifelines and respiratory equipment if there is any question as to the cause of an emergency?

Yes	No	NA	
☐	☐	☐	Is approved respiratory equipment required if the atmosphere inside the confined space cannot be made acceptable?
☐	☐	☐	Is all portable electrical equipment used inside confined spaces either grounded and insulated or equipped with ground fault protection?
☐	☐	☐	Before gas welding or burning is started in a confined space, are hoses checked for leaks, compressed gas bottles forbidden inside of the confined space, torches lighted only outside of the confined area, and the confined area tested for an explosive atmosphere each time before a lighted torch is to be taken into the confined space?
☐	☐	☐	If employees will be using oxygen-consuming equipment such as salamanders, torches or furnaces in a confined space, is sufficient air provided to ensure combustion without reducing the oxygen concentration of the atmosphere below 19.5 percent by volume?
☐	☐	☐	Whenever combustion-type equipment is used in a confined space, are provisions made to ensure the exhaust gases are vented outside of the enclosure?
☐	☐	☐	Is each confined space checked for decaying vegetation or animal matter that may produce methane?
☐	☐	☐	Is the confined space checked for possible industrial waste that could contain toxic properties?
☐	☐	☐	If the confined space is below the ground and near areas where motor vehicles are operating, is it possible for vehicle exhaust or carbon monoxide to enter the space?
			Environmental Controls
☐	☐	☐	Are all work areas properly illuminated?
☐	☐	☐	Are employees instructed in proper first aid and other emergency procedures?
☐	☐	☐	Are hazardous substances, blood and other potentially infectious materials that may cause harm by inhalation, ingestion, or skin absorption or contact identified?
☐	☐	☐	Are employees aware of the hazards involved with the various chemicals they may be exposed to in their work environment, such as ammonia, chlorine, epoxies and caustics?
☐	☐	☐	Is employee exposure to chemicals in the workplace kept within acceptable levels?
☐	☐	☐	Are the safest methods and products being used?
☐	☐	☐	Is the work area's ventilation system appropriate for the work being performed?
☐	☐	☐	Are spray painting operations done in spray rooms or booths equipped with an appropriate exhaust system?
☐	☐	☐	Is employee exposure to welding fumes controlled by ventilation, use of respirators, exposure time or other means?
☐	☐	☐	Are welders and other workers nearby provided with flash shields during welding operations?
☐	☐	☐	If forklifts and other vehicles are used in buildings or other enclosed areas, are the carbon monoxide levels kept below maximum acceptable concentration?
☐	☐	☐	Has there been a determination that noise levels in the facilities are within acceptable levels?
☐	☐	☐	Are steps being taken to use engineering controls to reduce excessive noise levels?
☐	☐	☐	Are proper precautions being taken when handling asbestos and other fibrous materials?
☐	☐	☐	Are caution labels and signs used to warn of hazardous substances (e.g., asbestos) and biohazards (e.g., bloodborne pathogens)?
☐	☐	☐	Are wet methods used, when practicable, to prevent the emission of airborne asbestos fibers, silica dust and similar hazardous materials?

Yes	No	NA	
☐	☐	☐	Are engineering controls examined and maintained or replaced on a scheduled basis?
☐	☐	☐	Is vacuuming with appropriate equipment used whenever possible rather than blowing or sweeping dust?
☐	☐	☐	Are grinders, saws and other machines that produce respirable dusts vented to an industrial collector or central exhaust system?
☐	☐	☐	Are all local exhaust ventilation systems designed and operating properly such as air flow and volume necessary for the application, ducts not plugged, or belts slipping?
☐	☐	☐	Is personal protective equipment provided, used and maintained wherever required?
☐	☐	☐	Are there written standard operating procedures for the selection and use of respirators where needed?
☐	☐	☐	Are restrooms and washrooms kept clean and sanitary?
☐	☐	☐	Is all water provided for drinking, washing and cooking potable?
☐	☐	☐	Are all outlets for water not suitable for drinking clearly identified?
☐	☐	☐	Are employees' physical capacities assessed before being assigned to jobs requiring heavy work?
☐	☐	☐	Are employees instructed in the proper manner of lifting heavy objects?
☐	☐	☐	Where heat is a problem, have all fixed work areas been provided with spot cooling or air conditioning?
☐	☐	☐	Are employees screened before assignment to areas of high heat to determine if their health condition might make them more susceptible to having an adverse reaction?
☐	☐	☐	Are employees working on streets and roadways where they are exposed to the hazards of traffic required to wear high visibility or reflective warning vests?
☐	☐	☐	Are exhaust stacks and air intakes so located that contaminated air will not be recirculated within a building or other enclosed area?
☐	☐	☐	Is equipment producing ultraviolet radiation properly shielded?
☐	☐	☐	Are universal precautions observed where occupational exposure to blood or other potentially infectious materials can occur and in all instances where differentiation of types of body fluids or potentially infectious materials is difficult or impossible?
			Flammable and Combustible Materials
☐	☐	☐	Are combustible scrap, debris and waste materials (oily rags, etc.) stored in covered metal receptacles and removed from the worksite promptly?
☐	☐	☐	Is proper storage practiced to minimize the risk of fire, including spontaneous combustion?
☐	☐	☐	Are approved containers and tanks used for the storage and handling of flammable and combustible liquids?
☐	☐	☐	Are all connections on drums and combustible liquid piping vapor and liquid tight?
☐	☐	☐	Are all flammable liquids kept in closed containers when not in use (e.g., parts cleaning tanks and pans)?
☐	☐	☐	Are bulk drums of flammable liquids grounded and bonded to containers during dispensing?
☐	☐	☐	Do storage rooms for flammable and combustible liquids have explosion-proof lights?
☐	☐	☐	Do storage rooms for flammable and combustible liquids have mechanical or gravity ventilation?
☐	☐	☐	Is liquefied petroleum gas stored, handled and used in accordance with safe practices and standards?
☐	☐	☐	Are "NO SMOKING" signs posted on liquefied petroleum gas tanks?
☐	☐	☐	Are liquefied petroleum storage tanks guarded to prevent damage from vehicles?

Yes	No	NA	
☐	☐	☐	Are all solvent wastes and flammable liquids kept in fire-resistant covered containers until they are removed from the worksite?
☐	☐	☐	Is vacuuming used wherever possible rather than blowing or sweeping combustible dust?
☐	☐	☐	Are firm separators placed between containers of combustibles or flammables, when stacked one upon another, to ensure their support and stability?
☐	☐	☐	Are fuel gas cylinders and oxygen cylinders separated by distance, fire-resistant barriers, etc., while in storage?
☐	☐	☐	Are fire extinguishers selected and provided for the types of materials in areas where they are to be used?
			Class A: Ordinary combustible material fires.
			Class B: Flammable liquid, gas or grease fires.
			Class C: Energized electrical equipment fires.
☐	☐	☐	Are appropriate fire extinguishers mounted within 75 feet of outside areas containing flammable liquids and within 10 feet of any inside storage area for such materials?
☐	☐	☐	Are extinguishers free from obstructions or blockage?
☐	☐	☐	Are all extinguishers serviced, maintained and tagged at intervals not to exceed one year?
☐	☐	☐	Are all extinguishers fully charged and in their designated places?
☐	☐	☐	Where sprinkler systems are permanently installed, are the nozzle heads so directed and arranged that water will not be sprayed into operating electrical switchboards and equipment?
☐	☐	☐	Are "NO SMOKING" signs posted where appropriate in areas where flammable or combustible materials are used or stored?
☐	☐	☐	Are safety cans used for dispensing flammable or combustible liquids at a point of use?
☐	☐	☐	Are all spills of flammable or combustible liquids cleaned up promptly?
☐	☐	☐	Are storage tanks adequately vented to prevent the development of excessive vacuum or pressure as a result of filling, emptying or atmosphere temperature changes?
☐	☐	☐	Are storage tanks equipped with emergency venting that will relieve excessive internal pressure caused by fire exposure?
☐	☐	☐	Are "NO SMOKING" rules enforced in areas involving storage and use of hazardous materials?
			Hazardous Chemical Exposure
☐	☐	☐	Are employees trained in the safe handling practices of hazardous chemicals, such as acids and caustics?
☐	☐	☐	Are employees aware of the potential hazards involving various chemicals stored or used in the workplace, such as acids, bases, caustics, epoxies and phenols?
☐	☐	☐	Is employee exposure to chemicals kept within acceptable levels?
☐	☐	☐	Are eyewash fountains and safety showers provided in areas where corrosive chemicals are handled?
☐	☐	☐	Are all containers such as vats and storage tanks labeled with their identity and hazards?
☐	☐	☐	Are all employees required to use personal protective clothing and equipment when handling chemicals (gloves, eye protection, respirators, etc.)?
☐	☐	☐	Are flammable or toxic chemicals kept in closed containers when not in use?
☐	☐	☐	Are chemical piping systems clearly marked as to their content?
☐	☐	☐	Where corrosive liquids are frequently handled in open containers or drawn from storage vessels or pipelines, are adequate means readily available for neutralizing or disposing of spills or overflows properly and safely?

Yes	No	NA	
☐	☐	☐	Have standard operating procedures been established and are they being followed when cleaning up chemical spills?
☐	☐	☐	Where needed for emergency use, are respirators stored in a convenient, clean and sanitary location?
☐	☐	☐	Are respirators intended for emergency use adequate for the various uses for which they may be needed?
☐	☐	☐	Are employees prohibited from eating in areas where hazardous chemicals are present?
☐	☐	☐	Is personal protective equipment provided, used and maintained whenever necessary?
☐	☐	☐	Are there written standard operating procedures for the selection and use of respirators where needed?
☐	☐	☐	If you have a respirator protection program, are your employees instructed on the correct usage and limitations of the respirators? Are the respirators NIOSH approved for this particular application? Are they regularly inspected and cleaned, sanitized and maintained?
☐	☐	☐	If hazardous substances are used in your processes, do you have a medical or biological monitoring system in operation?
☐	☐	☐	Are you familiar with the threshold limit values or permissible exposure limits of airborne contaminants and physical agents used in your workplace?
☐	☐	☐	Have control procedures been instituted for hazardous materials, where appropriate, such as respirators, ventilation systems and handling practices?
☐	☐	☐	Whenever possible, are hazardous substances handled in properly designed and exhausted booths or similar locations?
☐	☐	☐	Do you use general dilution or local exhaust ventilation systems to control dusts, vapors, gases, fumes, smoke, aerosols or mists that may be generated in your workplace?
☐	☐	☐	Is ventilation equipment provided for removal of contaminants from such operations as production, grinding, buffing, spray painting and vapor degreasing and is it operating properly?
☐	☐	☐	Do you monitor employees to make sure there are no complaints about dizziness, headaches, nausea, irritation or other discomfort when they use solvents or other chemicals?
☐	☐	☐	Do you watch for employee health problems such as dryness, irritation or sensitization of the skin?
☐	☐	☐	Have you considered the use of an industrial hygienist or environmental health specialist to evaluate your operation?
☐	☐	☐	If internal combustion engines are used, is carbon monoxide kept within acceptable levels?
☐	☐	☐	Is vacuuming used, rather than blowing or sweeping dusts, whenever possible for cleanup?
☐	☐	☐	Are materials that give off toxic, asphyxiant, suffocating or anesthetic fumes stored in remote or isolated locations when not in use?
			Respiratory Protection Program
☐	☐	☐	In any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by the employer, has a written respiratory protection program with worksite-specific procedures been established and implemented? If NA, go to next section.
			The program must be updated as necessary to reflect those changes in workplace conditions that affect respirator use. You must include in the program the following provisions as applicable:
☐	☐	☐	Procedures for selecting respirators for use in the workplace.
☐	☐	☐	Medical evaluations of employees required to use respirators.
☐	☐	☐	Fit testing procedures for tight-fitting respirators.

Yes	No	NA	
☐	☐	☐	Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations.
☐	☐	☐	Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding and otherwise maintaining respirators.
☐	☐	☐	Procedures to ensure adequate air quality, quantity and flow of breathing air for atmosphere-supplying respirators.
☐	☐	☐	Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations.
☐	☐	☐	Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance.
☐	☐	☐	Procedures for regularly evaluating the effectiveness of the program.
			Hazardous Substances Communication
☐	☐	☐	Is there a list of hazardous substances used in your workplace?
☐	☐	☐	Is there a written hazard communication program dealing with material safety data sheets (MSDS), labeling and employee training?
☐	☐	☐	Is each container for a hazardous substance (including vats, bottles and storage tanks) labeled with product identity and a hazard warning (communication of the specific health hazards and physical hazards)?
☐	☐	☐	Is there a material safety data sheet readily available for each hazardous substance used?
☐	☐	☐	Is there an employee training program for hazardous substances?
			This program needs to include:
☐	☐	☐	An explanation of what an MSDS is and how to use and obtain one.
☐	☐	☐	MSDS contents for each hazardous substance or class of substances.
☐	☐	☐	Explanation of “right to know.”
☐	☐	☐	Identification of where employees can see the employer’s written hazard communication program and where hazardous substances are present in their work areas.
☐	☐	☐	Physical and health hazards of substances in the work area and specific protective measures to be used.
☐	☐	☐	Details of the hazard communication program, including how to use the labeling system and MSDSs.
			Bloodborne Pathogens
☐	☐	☐	If employees are exposed to blood or other potentially infectious material, is there a written exposure control plan? If NA, skip to the next section.
			The employee training program on the bloodborne pathogens standard needs to contain the following elements:
☐	☐	☐	An accessible copy of the standard and an explanation of its contents.
☐	☐	☐	A general explanation of the epidemiology and symptoms of bloodborne diseases.
☐	☐	☐	An explanation of the modes of transmission of bloodborne pathogens.
☐	☐	☐	An explanation of the employer’s exposure control plan and the means by which employees can obtain a copy of the written plan.
☐	☐	☐	An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.
☐	☐	☐	An explanation of the use and limitations of methods that will prevent or reduce exposure, including appropriate engineering controls, work practices and personal protective equipment.

Yes	No	NA	
☐	☐	☐	Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.
☐	☐	☐	An explanation of the basis for selection of personal protective equipment.
☐	☐	☐	Information on the hepatitis B vaccine.
☐	☐	☐	Information on the appropriate actions to take and people to contact in an emergency involving blood or other potentially infectious materials.
☐	☐	☐	An explanation of the procedure to follow if an exposure incident occurs, including the methods of reporting the incident and the medical follow-up that will be made available.
☐	☐	☐	Information on post-exposure evaluations and follow-up.
☐	☐	☐	An explanation of signs, labels and color-coding.
			Are employees trained in the following:
☐	☐	☐	How to recognize tasks that might result in occupational exposure?
☐	☐	☐	How to use work practice and engineering controls and personal protective equipment and to know their limitations?
☐	☐	☐	How to obtain information on the types, selection, proper use, location, removal, handling, decontamination and disposal of personal protective equipment?
☐	☐	☐	Who to contact and what to do in an emergency?
			Electrical
☐	☐	☐	Do you specify compliance with OSHA standards for all contract electrical work?
☐	☐	☐	Are all employees required to report as soon as practicable any obvious hazard to life or property observed in connection with electrical equipment or lines?
☐	☐	☐	Are employees instructed to make preliminary inspections and/or appropriate tests to determine what conditions exist before starting work on electrical equipment or lines?
☐	☐	☐	When electrical equipment or lines are to be serviced, maintained or adjusted, are necessary switches opened, locked out and tagged whenever possible?
☐	☐	☐	Are portable electrical tools and equipment grounded or of the double-insulated type?
☐	☐	☐	Are electrical appliances such as vacuum cleaners, polishers and vending machines grounded?
☐	☐	☐	Do extension cords being used have a grounding conductor?
☐	☐	☐	Are multiple-plug adapters prohibited?
☐	☐	☐	Are ground-fault circuit interrupters installed on each temporary 15 or 20 ampere, 120 volt AC circuit at locations where construction, demolition, modifications, alterations or excavations are being performed?
☐	☐	☐	Are all temporary circuits protected by suitable disconnecting switches or plug connectors at the junction with permanent wiring?
☐	☐	☐	Do you have electrical installations in hazardous dust or vapor areas? If so, do they meet the National Electrical Code (NEC) for hazardous locations?
☐	☐	☐	Are exposed wiring and cords with frayed or deteriorated insulation repaired or replaced promptly?
☐	☐	☐	Are flexible cords and cables free of splices or taps?
☐	☐	☐	Are clamps or other securing means provided on flexible cords or cables at plugs, receptacles, tools and equipment, and is the cord jacket securely held in place?
☐	☐	☐	Are all cord, cable and raceway connections intact and secure?

Yes	No	NA	
☐	☐	☐	In wet or damp locations, are electrical tools and equipment appropriate for the use or location or otherwise protected?
☐	☐	☐	Is the location of electrical power lines and cables (overhead, underground, underfloor, other side of walls) determined before digging, drilling or similar work is begun?
☐	☐	☐	Are metal measuring tapes, ropes, handlines or similar devices with metallic thread woven into the fabric prohibited where they could come in contact with energized parts of equipment of circuit conductors?
☐	☐	☐	Is the use of metal ladders prohibited in areas where the ladder or the person using the ladder could come in contact with energized parts of equipment, fixtures or circuit conductors?
☐	☐	☐	Are all disconnecting switches and circuit breakers labeled to indicate their use or equipment served?
☐	☐	☐	Are disconnecting means always opened before fuses are replaced?
☐	☐	☐	Do all interior wiring systems include provisions for grounding metal parts of electrical raceways, equipment and enclosures?
☐	☐	☐	Are all electrical raceways and enclosures securely fastened in place?
☐	☐	☐	Are all energized parts of electrical circuits and equipment guarded against accidental contact by approved cabinets or enclosures?
☐	☐	☐	Is sufficient access and working space provided and maintained about all electrical equipment to permit ready and safe operations and maintenance?
☐	☐	☐	Are all unused openings (including conduit knockouts) in electrical enclosures and fittings closed with appropriate covers, plugs or plates?
☐	☐	☐	Are electrical enclosures such as switches, receptacles and junction boxes provided with tight-fitting covers or plates?
☐	☐	☐	Are disconnecting switches for electrical motors in excess of 2 horsepower capable of opening the circuit when the motor is in a stalled condition without exploding? (The horsepower rating of switches must be equal to or in excess of the motor's horsepower rating.)
☐	☐	☐	Is low voltage protection provided in the control device of motors driving machines or equipment that could cause probable injury from inadvertent starting?
☐	☐	☐	Is each motor disconnecting switch or circuit breaker located within sight of the motor control device?
☐	☐	☐	Is each motor located within sight of its controller or the controller disconnecting means capable of being locked in the open position or is a separate disconnecting means installed in the circuit within sight of the motor?
☐	☐	☐	Is the controller for each motor in excess of 2 horsepower rated in horsepower equal to or in excess of the rating of the motor it serves?
☐	☐	☐	Are employees who regularly work on or around energized electrical equipment or lines instructed in cardiopulmonary resuscitation (CPR)?
☐	☐	☐	Are employees prohibited from working alone on energized lines or equipment over 600 volts?
			Noise
☐	☐	☐	Does every area in the workplace have a continuous noise level that does not exceed 85 dBA? If yes, skip to the next set of questions.
☐	☐	☐	Is there an ongoing preventive health program to educate employees in safe levels of noise, exposures, effects of noise on their health and the use of personal protection?
☐	☐	☐	Have work areas where noise levels make voice communication between employees difficult been identified and posted?

Yes	No	NA	
☐	☐	☐	Are noise levels being measured using a sound level meter or octave band analyzer and are records being kept?
☐	☐	☐	Have engineering controls been used to reduce excessive noise levels? Where engineering controls are determined to not be feasible, are administrative controls (such as worker rotation) being used to minimize individual employee exposure to noise?
☐	☐	☐	Is approved hearing protective equipment (noise attenuating devices) available to every employee working in noisy areas?
☐	☐	☐	Have you tried isolating noisy machinery from the rest of your operation?
☐	☐	☐	If you use ear protectors, are employees properly fitted and instructed in their use?
☐	☐	☐	Are employees in high noise areas given periodic audiometric testing to ensure that you have an effective hearing protection system?
			Fueling
☐	☐	☐	Is it prohibited to fuel an internal combustion engine with a flammable liquid while the engine is running?
☐	☐	☐	Are fueling operations done in such a manner that the likelihood of spillage will be minimal?
☐	☐	☐	When spillage occurs during fueling operations, is the spilled fuel washed away completely, evaporated, or other measures taken to control vapors before restarting the engine?
☐	☐	☐	Are fuel tank caps replaced and secured before starting the engine?
☐	☐	☐	In fueling operations, is there always metal contact between the container and the fuel tank?
☐	☐	☐	Are fueling hoses of a type designed to handle the specific type of fuel?
☐	☐	☐	Is it prohibited to handle or transfer gasoline in open containers?
☐	☐	☐	Are open lights, open flames, or sparking or arcing equipment prohibited near fueling or transfer of fuel operations?
☐	☐	☐	Is smoking prohibited in the vicinity of fueling operations?
☐	☐	☐	Are fueling operations prohibited in buildings or other enclosed areas that are not specifically ventilated for this purpose?
☐	☐	☐	Where fueling or transfer of fuel is done through a gravity flow system, are the nozzles of the self-closing type?
			Identification of Piping Systems
☐	☐	☐	When nonpotable water is piped through a facility, are outlets or taps posted to alert employees that it is unsafe and not to be used for drinking, washing or other personal use?
☐	☐	☐	When hazardous substances are transported through above ground piping, is each pipeline identified at points where confusion could introduce hazards to employees?
☐	☐	☐	When a pipeline is identified by color painting, are all visible parts of the line so identified?
☐	☐	☐	When pipelines are identified by color painted bands or tapes, are the bands or tapes located at reasonable intervals and at each outlet, valve or connection?
☐	☐	☐	When pipelines are identified by color, is the color code posted at all locations where confusion could introduce hazards to employees?
☐	☐	☐	When the contents of pipelines are identified by name or name abbreviation, is the information readily visible on the pipe near each valve or outlet?
☐	☐	☐	When pipelines carrying hazardous substances are identified by tags, are the tags constructed of durable materials, the message carried clearly and permanently distinguishable, and are tags installed at each valve or outlet?

Yes	No	NA	
☐	☐	☐	When pipelines are heated by electricity, steam or another external source, are suitable warning signs or tags placed at unions, valves or other serviceable parts of the system?
			Materials Handling
☐	☐	☐	Is there safe clearance for equipment through aisles and doorways?
☐	☐	☐	Are aisleways designated, permanently marked and kept clear to allow unhindered passage?
☐	☐	☐	Are motorized vehicles and mechanized equipment inspected daily or before use?
☐	☐	☐	Are containers of combustibles or flammables, when stacked while being moved, always separated by dunnage sufficient to provide stability?
☐	☐	☐	Are dockboards (bridge plates) used when loading or unloading operations are taking place between vehicles and docks?
☐	☐	☐	Are trucks and trailers secured from movement during loading and unloading operations?
☐	☐	☐	Are dock plates and loading ramps constructed and maintained with sufficient strength to support imposed loading?
☐	☐	☐	Are hand trucks maintained in safe operating condition?
☐	☐	☐	Are chutes equipped with sideboards of sufficient height to prevent the materials being handled from falling off?
☐	☐	☐	Are chutes and gravity roller sections firmly placed or secured to prevent displacement?
☐	☐	☐	At the delivery end of the rollers or chutes, are provisions made to brake the movement of the handled materials?
☐	☐	☐	Are pallets inspected before being loaded or moved?
☐	☐	☐	Are hooks with safety latches or other arrangements used when hoisting materials so that slings or load attachments will not accidentally slip off the hoist hooks?
☐	☐	☐	Are securing chains, ropes, chockers or slings adequate for the job to be performed?
☐	☐	☐	When hoisting material or equipment, are provisions made to ensure no one will be passing under the suspended loads?
☐	☐	☐	Are material safety data sheets available to employees handling hazardous substances?
			Transporting Employees and Materials
☐	☐	☐	Do employees who operate vehicles on public thoroughfares have valid operator's licenses?
☐	☐	☐	When seven or more employees are regularly transported in a van, bus or truck, is the operator's license appropriate for the class of vehicle being driven?
☐	☐	☐	Is each van, bus or truck used regularly to transport employees equipped with an adequate number of seats?
☐	☐	☐	When employees are transported by truck, are provisions provided to prevent their falling from the vehicle?
☐	☐	☐	Are vehicles used to transport employees equipped with lamps, brakes, horns, mirrors, windshields and turn signals in good repair?
☐	☐	☐	Are transport vehicles provided with handrails, steps, stirrups or similar devices, so placed and arranged that employees can safely mount and dismount?
☐	☐	☐	Are employee transport vehicles equipped at all times with at least two reflective type flares?
☐	☐	☐	When cutting tools or tools with sharp edges are carried in passenger compartments of employee transport vehicles, are they placed in closed boxes or containers that are secured in place?

Yes	No	NA	
☐	☐	☐	Are employees prohibited from riding on top of any load that can shift, topple or otherwise become unstable?
			Control of Harmful Substances by Ventilation
☐	☐	☐	Is the volume and velocity of air in each exhaust system sufficient to gather the dusts, fumes, mists, vapors or gases to be controlled and to convey them to a suitable point of disposal?
☐	☐	☐	Are exhaust inlets, ducts and plenums designed, constructed and supported to prevent collapse or failure of any part of the system?
☐	☐	☐	Are clean-out ports or doors provided at intervals not to exceed 12 feet in all horizontal runs of exhaust ducts?
☐	☐	☐	Are proper safeguards taken to ensure that where two or more different types of operations are being controlled through the same exhaust system, the combination of substances being controlled do not constitute a fire, explosion or chemical reaction hazard in the duct?
☐	☐	☐	Is adequate makeup air provided to areas where exhaust systems are operating?
☐	☐	☐	Is the source point for makeup air located so that only clean, fresh air, which is free of contaminants, will enter the work environment?
☐	☐	☐	Where two or more ventilation systems are serving a work area, is their operation such that one will not offset the function of the other?
			Sanitizing Equipment and Clothing
☐	☐	☐	Is personal protective clothing or equipment that employees are required to wear or use of a type capable of being cleaned easily and disinfected?
☐	☐	☐	Are employees prohibited from interchanging personal protective clothing or equipment unless it has been properly cleaned?
☐	☐	☐	Are machines and equipment that process, handle or apply materials that could be injurious to employees cleaned and/or decontaminated before being overhauled or placed in storage?
☐	☐	☐	Are employees prohibited from smoking or eating in any area where contaminants that could be injurious if ingested are present?
☐	☐	☐	When employees are required to change from street clothing into protective clothing, is a clean change room with separate storage facility for street and protective clothing provided?
☐	☐	☐	Are employees required to shower and wash their hair as soon as possible after a known contact has occurred with a carcinogen?
☐	☐	☐	When equipment, materials or other items are taken into or removed from a carcinogen-regulated area, is it done in a manner that will not contaminate nonregulated areas or the external environment?
			Tire Inflation
☐	☐	☐	Where tires are mounted or inflated on drop center wheels, is a safe practice procedure posted and enforced?
☐	☐	☐	Where tires are mounted or inflated on wheels with split rims or retainer rings, is a safe practice procedure posted and enforced?
☐	☐	☐	Does each tire inflation hose have a clip-on chuck with at least 24 inches of hose between the chuck and an in-line hand valve and gauge?
☐	☐	☐	Does the tire inflation control valve automatically shut off the airflow when the valve is released?
☐	☐	☐	Is a tire restraining device, such as a cage, rack or other effective means, used while inflating tires mounted on split rims or rims using retainer rings?
☐	☐	☐	Are employees strictly forbidden from taking a position directly over or in front of a tire while it's being inflated?

Monthly Building Inspection Form

Building: _____ Inspector: _____ Date:_____

Yes	No	Identified Hazard	Comments/Action(s)
		Electric cord attached to building surface or run through door/ceiling/wall.	
		Electric cord frayed, cut, or damaged.	
		Light-duty 2-prong extension cord used.	
		Ground pin missing from cord.	
		Empty opening (knockout) in electric box.	
		Exposed live electrical parts.	
		Ungrounded equipment.	
		Storage within 3' of electric panels.	
		Circuit breakers/disconnects not labeled.	
		Fire extinguishers blocked/obscured.	
		Fire extinguishers w/o monthly check.	
		Exit doors blocked/locked.	
		Exit signs/arrows not in place and visible.	
		Emergency evacuation lights not tested.	
		Storage >5 feet w/o stepstool or ladder.	
		Storage within 18 inches of sprinkler heads.	
		Storage within 3 feet of heater/heat source.	
		Storage aisles <28 inches wide.	
		Storage stacks lean/unstable.	
		Compressed gas not capped/chained	
		Excessive flammables outside of cabinets.	
		Incompatible chemicals stored together.	
		Chemicals not labeled with name/hazards.	
		Material safety data sheets not available.	
		Emergency shower/eyewash not tested weekly.	
		Housekeeping not up to standards.	
		Wet/slippery floors not marked.	
		Trip hazards in floor, stairs, sidewalks etc	
		First aid kit and PPE not available.	
		Burned out or missing light bulbs.	
		Oily/greasy rags not in covered metal can.	
		Machinery guards not in place.	
		Guardrails/stair-rails missing or not in place.	
		PPE not provided and/or properly used.	
		Other:	
		Other:	

Monthly Inspection Checklist

Floors and floor openings	**Yes**	**No**	**N/A**
Are floors in good condition, free of broken and pitted surfaces?			
Are floor coverings, such as carpets and mats, in good condition?			
Are floor openings properly protected?			
Are stairways equipped with appropriate handrails, guardrails?			
Check floors for slippery conditions—a major cause of falls?			

Aisles and passageways	**Yes**	**No**	**N/A**
Are aisles and passageways kept clear?			
Are they free of tripping hazards?			

Machines	**Yes**	**No**	**N/A**
Are belts, pulleys, gears, chains and sprockets guarded?			
Are effective point of operation guards in use?			
Is additional guarding needed?			

Electrical	**Yes**	**No**	**N/A**
Are extension cords used appropriately, i.e., *not* in place of permanent wiring?			
Are electrical cords stretched across the floor without appropriate floor covers?			
Are electrical cords free from damage (exposed wires, missing grounding pins)?			
Are portable electrical tools grounded?			

Hand Tools	**Yes**	**No**	**N/A**
Are the right tools for the job used?			
Are tools in good condition?			
Are cutting edges sharp?			
Are tools with mushroomed heads, split handles and other defects tagged and removed from service?			

Housekeeping	**Yes**	**No**	**N/A**
Is the department clean and orderly?			
Are materials properly stored out of walkways or paths to exits?			

Storage of materials	**Yes**	**No**	**N/A**
Are materials and supplies properly stacked—within recommended heights?			
Are flammable materials properly handled and stored?			
Are all chemical containers appropriately labeled?			

Lighting	**Yes**	**No**	**N/A**
Is lighting in work and storage areas, passageways and stairways satisfactory?			
Check for burned out bulbs.			
Check light guarding and reflectors.			

Ventilation	**Yes**	**No**	**N/A**
Is there good general ventilation?			
Is there adequate local ventilation to control possible health hazards?			

Ladders	**Yes**	**No**	**N/A**
Are portable ladders of standard construction and in good condition?			
Are fixed ladders of standard construction and securely fastened?			

Fire Extinguishers	Yes	No	N/A
Are enough fire extinguishers of the right type available and easily accessible?			
Is all fire suppressant equipment in proper working order?			
Are fire extinguishers properly mounted?			
Are fire extinguishers inspected on a monthly and annual basis?			

Exits	Yes	No	N/A
Are emergency exits adequate in number and location and properly identified?			
Are any exits blocked or locked, preventing escape to the outside?			

OSH Publications

We provide a variety of OSH publications. These include general industry and construction regulations, industry guides that cover different OSH topics, quick cards, fact sheets and brochures that cover a wide variety of serious safety and health workplace hazards. Workplace labor law posters are available free of charge. Review the entire list of publications at **www.nclabor.com/pubs.htm**.

To obtain publications, call toll free at 1-800-NC-LABOR (1-800-625-2267) or direct at 919-807-2875. You may also download publications from **www.nclabor.com/pubs.htm** or visit us at 111 Hillsborough St., Raleigh, 4th Floor *(near state capitol)*.

Occupational Safety and Health (OSH)
Sources of Information

You may call 1-800-NC-LABOR (1-800-625-2267) to reach any division of the N.C. Department of Labor; or visit the NCDOL home page on the World Wide Web: http://www.nclabor.com.

Occupational Safety and Health Division

Mailing Address:
1101 Mail Service Center
Raleigh, NC 27699-1101
Local Telephone: 919-807-2900 Fax: 919-807-2856

Physical Location:
111 Hillsborough St.
(Old Revenue Building, 3rd Floor)

For information concerning education, training, interpretations of occupational safety and health standards, and OSH recognition programs contact:

Education, Training and Technical Assistance Bureau

Mailing Address:
1101 Mail Service Center
Raleigh, NC 27699-1101
Telephone: 919-807-2875 Fax: 919-807-2876

Physical Location:
111 Hillsborough St.
(Old Revenue Building, 4th Floor)

For information concerning occupational safety and health consultative services contact:

Consultative Services Bureau

Mailing Address:
1101 Mail Service Center
Raleigh, NC 27699-1101
Telephone: 919-807-2899 Fax: 919-807-2902

Physical Location:
111 Hillsborough St.
(Old Revenue Building, 3rd Floor)

For information concerning migrant housing inspections and other related activities contact:

Agricultural Safety and Health Bureau

Mailing Address:
1101 Mail Service Center
Raleigh, NC 27699-1101
Telephone: 919-807-2923 Fax: 919-807-2924

Physical Location:
111 Hillsborough St.
(Old Revenue Building, 2nd Floor)

For information concerning occupational safety and health compliance contact:

Safety and Health Compliance District Offices

Raleigh District Office (3801 Lake Boone Trail, Suite 300, Raleigh, NC 27607)
Telephone: 919-779-8570 Fax: 919-420-7966

Asheville District Office (204 Charlotte Highway, Suite B, Asheville, NC 28803-8681)
Telephone: 828-299-8232 Fax: 828-299-8266

Charlotte District Office (901 Blairhill Road, Suite 200, Charlotte, NC 28217-1578)
Telephone: 704-665-4341 Fax: 704-665-4342

Winston-Salem District Office (4964 University Parkway, Suite 202, Winston-Salem, NC 27106-2800)
Telephone: 336-776-4420 Fax: 336-767-3989

Wilmington District Office (1200 N. 23rd St., Suite 205, Wilmington, NC 28405-1824)
Telephone: 910-251-2678 Fax: 910-251-2654

*****To make an OSH Complaint,* OSH Complaint Desk:** 919-807-2796***

For statistical information concerning program activities contact:

Planning, Statistics and Information Management Bureau

Mailing Address:
1101 Mail Service Center
Raleigh, NC 27699-1101
Telephone: 919-807-2950 Fax: 919-807-2951

Physical Location:
111 Hillsborough St.
(Old Revenue Building, 2nd Floor)

For information about books, periodicals, vertical files, videos, films, audio/slide sets and computer databases contact:

N.C. Department of Labor Library

Mailing Address:
1101 Mail Service Center
Raleigh, NC 27699-1101
Telephone: 919-807-2848 Fax: 919-807-2849

Physical Location:
111 Hillsborough St.
(Old Revenue Building, 5th Floor)

N.C. Department of Labor (Other than OSH)

1101 Mail Service Center
Raleigh, NC 27699-1101
Telephone: 919-733-7166 Fax: 919-733-6197